COLONIAL OFFICE

GOVERNMENT OF PALESTINE.

ANNUAL REPORT

OF THE

DEPARTMENT OF HEALTH

FOR THE YEAR

1925.

GG/130/41.

DEPARTMENT OF HEALTH.
GOVERNMENT OF PALESTINE.
JERUSALEM.

22nd December, 1926.

Sir,

I have the honour to submit for the information of His Excellency the High Commissioner and for transmission to the Right Hon. the Secretary of State, the Annual Report of the Department of Health for the year 1925.

I have the honour to be,
Sir,
Your obedient servant,

G. W. Heron.

DIRECTOR.

The Chief Secretary,
Government Offices,
Jerusalem.

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PALESTINE.

Annual Report of the Department of Health
1925.

The Model Medical Report has been followed The Report is a very good one and is a record of very considerable progress in nearly all the services and good organization. The Committee will wish to congratulate Col.Heron and his staff on the work done.

p. 4. The Expenditure was £E.84,481 against £E.82,423 in the previous year and £E. 142,885 in the 1921-22 period. There has been no increase in the ?personnel person~~al~~

p. 5. __General Health__.

The general health has been good except for an Epidemic of Measles, The country has been free from Epidemics.

p. 6. __Infant Mortality__.

This continues to be high largely due to the disinclination of Moslem women to have attendance in childbirth and after. It was 188.64 per Mille against 184.83 in 1924.

The bulk of the medical institutions are worked on a charitable basis which is a feature of this Country. They co-operate with the Government health department but the funds are found from voluntary contributions.

p. 7 __Plague and Smallpox__.

Nil.

__Enteric Fever__ is prevalent among the Jewish community every effort is being made to improve the water supplies.

__Syphilis__

p. 8. **Syphilis** is prevalent in some villages but is of a mild type with few Tertiary manifestations. The special clinic in Hebron is doing good work, another is to be opened shortly in that Town.

Malaria.

The decline in this disease has been very noticeable. 13 deaths recorded against 526 in 1920; percentage of Malarial patients 2.1% against 7.2% in 1922. The spleen rate has decreased in all the districts inspected. A report of the Malaria Commission of the League of Nations is given as an Appendix, it has been previously circulated to the Committee in their publication.

Ophthalmic diseases.

The Order of St. John of Jerusalem has further developed the ophthalmic service and the training of Nurses and Medical Officers in this branch.

p. 9. **Labour.**

The new Ordinance places the responsibility for the hours of labour of children and of adults in certain industries under the health department.

p.9. **Town planning.**

A new Ordinance gives wide powers to regulate new Construction and Building Permit Sub-committees have been formed in each district to consider new applications. This has led to material improvements, but old Quarters in the larger towns show little improvement.

p.11. **Vital Statistics.**

Death rate 27.55 per mille against 25.04 in 1924.

Birth rate 49.31 per mille against 51.31 in 1924.

Registration is now compulsory, and is in the hands of the Health Department.

p. 14. **Schistosomiasis** is being dealt with in infected districts by solution of copper sulphate with success.

p. 15. 76.433 vaccinations were performed with good results.

p. 18. A striking feature of the year has been the general adoption of mosquito-proof iron covers for the rainwater tanks. Over 50 tons of oil were used in oiling tanks, &c.

p. 20. Only 3 deaths occurred from hydrophobia. Over 13,000 animals were destroyed.

p. 21. **Hospitals and Dispensaries.**

The Government policy of devolution has been continued, nearly all the hospitals and dispensaries are run by the municipalities or by private bodies. 3,939 inpatients were admitted to the hospitals and 219,281 seen at the dispensaries.

p. 23. The Committee will wish to congratulate the mission hospitals on the good work they are doing both in attendance on the poor and in training nursing staff, over 100 nurses were trained during the period, and 131 were under training.

p. 25. **Child Welfare.**

This is making good progress. 15 midwives were trained and 22,292 centres visited.

Ophthalmic Service.

Great progress has been made 62,256 cases were seen at the centres. Much visiting of the districts was done by the ophthalmic surgeons.

School

p. 29. **School Inspection.**

Much still requires to be done to improve the sanitary arrangements of most of the schools but all schools were visited and over 20,000 children seen in Jewish schools.

p. 32. **Prison Medical Service.**

There has been great improvement in the health of the inmates, a decrease of 50% in the number of dispensary cases.

Tuberculosis has again been the most serious disease in the central prisons, the majority of the cases show first signs between the 6th and 24th months of imprisonment.

p. 35. Medical practitioners increased from 481 to 587. There is overcrowding in the profession. Unqualified persons practising Midwifery have to register their names or cease from practising.

p. 42. Model building bye-laws are being drafted. The general cleanliness of the Arab villages is improving. Scavengers have been appointed in many of them.

p. 45. **Quarantine.**

The feature of the year was the great increase in Jewish immigration and the absence of Moslem pilgrimages due to the disturbed political situation in the Hijaz.

48,000 persons disembarking at ports were subject to medical surveillance.

Laboratory

p. 48 **Laboratory Section.**

to This is a record of good and increasing work.
p. 62. A Calf Lymph Establishment was opened during the year rendering Palestine independent of outside sources. The conclusions on page 55 as to Anti-Rabic vaccine are interesting.

G. T. R.
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ANNUAL REPORT - 1925.

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ANNUAL REPORT.

DEPARTMENT OF HEALTH.

GOVERNMENT OF PALESTINE.

1925.

I. GENERAL CONSIDERATIONS.

A. ADMINISTRATION.

(a) The senior staff of the Department has suffered no material change during the year. The sphere of duties of the S.M.Os has been altered in such fashion as to coordinate with the re-arrangement of Administrative Districts. The supervision of the Railway medical arrangements and the Land Quarantine has been vested in the S.M.O. at Haifa whose previous district of Galilee has been taken over by the S.M.O. Samaria.

Study leave has been granted to Dr. J.W.P. Harkness to allow him to take the first part for the Diploma of Public Health.

Dr. Halim Abu Rahmeh, who passed the course for the D.T.M. & H. at the London School of Tropical Medicine in the summer of 1925, was seconded for service as Director of the Public Health Department of Transjordan in order to reorganize that service.

Dr. Fuad Dejani, M.C., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed to replace Dr. Halim Abu Rahmeh seconded, and posted to the Municipal Hospital, Jaffa.

Dr. M.S. Malouf has been posted to the Mental Hospital, Bethlehem.

Dr. T. Mossauba, Medical Officer in charge of the Municipal Hospital at Jaffa, was granted prolonged sick leave on account of pulmonary tuberculosis.

Miss N. Ingham, after six years loyal service in the O.E.T. Administration (S) and Government of Palestine was invalided out of the service.

Minor alterations in posting of Medical Officers and junior personnel have been effected.

The following was the distribution of staff:-

Appointment.	Grade.	Name.	Station.
dquarters & District Administration.			
ector.	I	Colonel G.W. Heron, D.S.O., O.B.E.	Jerusalem.
uty Director. ospital & Medical Section).	II	R. Briercliffe, O.B.E.	do.
ior Medical Officer erusalem District).	II	J.A. Henderson.	do.
ior Medical Officer amaria & Galilee).	III	W.R. Bigger, M.C.	Nablus.
ior Medical Officer at H.Qrs charge of Sanitary and idemic Section.	III	J.W.P. Harkness.	Jerusalem.

Appointment.	Grade.	Name.	Station.
Headquarters & District Administration (Contd).			
Senior Medical Officer (Haifa District, Railways and Land Quarantine).	III	W.P.H. Lightbody.	Haifa.
Senior Medical Officer (Jaffa and Gaza Districts).	III	A. Rankine, M.C.	Jaffa.
Asst. Senior Medical Officer (Jerusalem District).	III	J. MacQueen.	Jerusalem.
Senior Medical Officer (Gendarmerie). Temporary.	III	H.S. Beadles.	Sarafand.
Hospital & Medical Services.			
Asst. Senior Medical Officer (Hospitals and Schools).	IV	D. Bulos, M.B.E.	Acre.
Asst. Senior Medical Officer (School of Instruction).	IV	H.F. Khalidi.	Jerusalem.
Medical Officer (Hospital and Schools).	V	S. Bodossian.	Ramleh.
Medical Officer (Mental Hospital).	V	K. Kesheshian.	Bethlehem.
Medical Officer (Hospital and District).	V	F.I. Haddad.	Tulkarem.
Medical Officer (Hospital).	V	Y. Hajjar.	Jerusalem.
Medical Officer (Hospital and Schools).	V	H.S. Khalidi.	Nablus.
Medical Officer (Schools).	V	M.S. Malouf.	Jerusalem.
Medical Officer (Hospital and Schools).	V	F. Dejani.	Jaffa.
Medical Officer (Hospital and Schools).	V	Naif Hamzeh.	Gaza.
Medical Officer (Hospital and District).	V	K. Abu Ghazaleh.	Beersheba.
Medical Officer (Hospital and Schools).	V	A. Sternberg.	Haifa.
Medical Officer (Special Clinic).	V	H. Torian.	Hebron.
Inspector of Pharmacies.	V	Farid Haddad.	
Matron.	Special.	Miss K. Townsend.	Jerusalem.
do.	do.	Miss E. Dickin.	Nablus.
do.	do.	Miss E. Davies.	Jaffa.
do.	do.	Miss D.L. Whitaker.	Bethlehem.
do.	do.	Miss L.J. Hanson.	Jerusalem.
do.	do.	Miss E. Redmile.	Haifa.
Sanitary & Epidemic Section.			
Sanitary Engineer.	III	L. Cantor.	Jerusalem.
Asst. Senior Medical Officer.	IV	R. Oplatka, M.B.E.	Jaffa-Tel Aviv.
do.	IV	H. Abu Rahmeh.	Seconded as Director of Public Health Transjordan
do.	IV	M. Shishmanoglou.	Jaffa.
do.	IV	J. Tucktuck.	Nablus.
do.	IV	Z. Haddad.	Haifa.

Appointment.	Grade.	Name.	Station.
Sanitary & Epidemic Section (Contd).			
Medical Officer.	V	F.K. Abla.	Jaffa.
do.	V	A. Abdel Al.	Hebron.
do.	V	G. Ayoub.	Nazareth.
do.	V	M. Erdikian.	Acre.
do.	V	I. Haurani.	Gaza.
do.	V	K. Eid.	Jerusalem.
do.	V	Taher el Khatib.	Jenin.
do. (Epidemic).	V	M.K. Mishalany.	Haifa.
Inspector of Public Establishments and Unhealthy Trades.	V	A. Paulus.	
Medical Officer.	V	A.A. Shehadeh.	Majdal.
do.	V	F. Shubeita.	Jaffa.
do.	V	E. Sikkarieh.	Beisan.
do.	V	M. Shukair.	Nablus.
do.	V	A. Haddad.	Ramleh.
do.	V	J. Hassoun.	Haifa.
do.	V	A. Shehadeh.	Ramallah.
do.	V	I. Itayim.	Safad.
do.	V	S. Saleem.	Jerusalem.
do.	V	S. Yassin.	Tiberias.
Quarantine Section.			
Asst. Senior Medical Officer (Quarantine).	IV	Y. Chami.	Jaffa.
Medical Officer (Quarantine).	V	B. Franco.	Haifa.
Medical Officer (Quarantine).	V	A. Malchi.	
Laboratory Section.			
Assistant Director (Laboratory Section).	II	G. Stuart.	Jerusalem.
Government Analyst.	III	G.W. Baker.	do.
Medical Officer (Laboratories).	IV	K. Krikorian.	do.
Assistant Analyst.	V	W. Itayim.	do.

(b) The following ordinances and Regulations affecting Public Health have been enacted during the year:-

Dangerous Drugs Ordinance 1925. (Official Gazette No.140 of 1-6-25). Promulgated in Official Gazette No.143 of 16-7-25.

Regulations, under the Quarantine Ordinance 1922, for persons arriving in Palestine. (Official Gazette No.149 of 16-10-25).

An Ordinance to control the Practice of Dentistry has been in preparation.

A considerable amount of work has been expended on a Trades and Industries Ordinance. It is important to the Public Health that Trades and Industries throughout the country be brought under the control that has been possible of adoption by the Department in Municipal areas only under the Ottoman Law.

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The Regulations for Prisons issued (1925) by the Department of Police and Prisons under the Prisons Ordinance of 1921 incorporated details of Medical and Sanitary procedure prepared by the Department.

(c) The following is a summary of the estimates of Revenue and Expenditure of the Department for the financial year 1925-26. The comparative total figures for previous years are given.

	Revenue.	Expenditure.		
1925-26.	£E.9050.	A. Personal Emoluments.	£E.63,140	
		B. Other Charges.	£E.21,341	£E. 84,481

Detail of Other Charges.

Travelling and Transport.	£E.4750
Lighting and Heating.	1200
Drugs, Dressings & Instruments.	3160
Vaccines and Sera.	404
Equipment and Stores.	1300
Disinfectants and Maintenance of Disinfecting Machines.	1000
Hospital Diets.	5800
Clothing.	900
Epidemic Outbreaks.	500
Medical Attendance in Private Hospitals.	200
Relief.	175
Contribution to Tropical Diseases Bureau.	50
Contribution to Colonial Medical & Sanitary Advisory Committee.	12
Fees for notifications of Births and Deaths in villages.	400
Medical Library.	60
Contingencies.	100
Tentage for Jaffa Quarantine Lazarette.	180
Investigation and Treatment of Syphilis.	1150
	£E.21341

1924-25.	£E.9570.	A. Personal Emoluments.	£E.61,791	
		B. Other Charges.	£E.20,632	£E. 82,423
1923-24.	£E.11590.	A. Personal Emoluments.	£E.64,226	
		B. Other Charges.	£E.29,032	£E. 93,258
1922-23.	£E.8720.	A. Personal Emoluments.	£E.72,508	
		B. Other Charges.	£E.32,860	£E.105,368
1921-22.	£E.8150.	A. Personal Emoluments.	£E.70,914	
		B. Other Charges.	£E.82,795	
			£E.153,709	
Less estimated cost of Railway Medical services.			£E. 10,824	£E.142,885

The Palestine Government Estimates of Revenue and Expenditure for the year under review were as follows:-

Revenue.	£E. 2,533,855.
Expenditure.	£E. 2,166,601.

The reduction in Other Charges under sub-head "Hospital Diets" was possible on account of the extension of the system of Municipal cooperation in administration and financial control of non-technical services in what were previously Government Hospitals. A reduction in the estimates for minor Hospital personnel, of fuel and disinfectants has also been possible on this account. It is of interest to note that the Hospital Diet contracts throughout Palestine rose by 65% in the second half of the year on account of the general rise in the price of foodstuffs.

No expansion of the Public Health Services was permissible during the year 1925-26 on account of financial stringency, and the apparent increase in the estimates of the Department are more than accounted for by the normal annual increments of salaried personnel.

B. PUBLIC HEALTH.

1. General Diseases.

The incidence of general disease in the country is comparable to that existing in western countries, with this difference that the less educated and less civilized classes of the population, especially in rural districts, do not yet realize the importance in disease of nursing, suitable diet and sick accommodation. The result is that case mortality is inevitably higher.

The country in respect of its realization of the advantage of medical aid is considerably in advance of other Near Eastern countries on account of its longer and closer association with the West through the agency first of the Crusaders and secondly of the Missionaries and European pilgrims, who have all introduced medical elements from the West during the last 8 centuries. It is, however, the case that ancient prejudices and customs still exist and are practised amongst the Arab people. Quack doctors, surgeons and bonesetters still have their vogue, and our experience of their methods in certain specific instances has been alarming.

The generality of the population, however, readily seek medical aid and have no fear of Hospitals, except that in maternity cases and in the diseases of infants and small children, they habitually avoid the doctor. The Jewish population very readily seek medical aid for ailments even of a minor description as the records of attendances at Dispensaries of this comparatively robust section of the population clearly indicate.

The incidence of cancer is not high and pneumonia, except as a sequela of measles and bronchitis, is not unduly prevalent.

Rheumatic and heart disease and diseases of the central nervous system, of the kidney and urinary tract, and diabetes, show a lower incidence than in Europe. It must, however, be understood that a diagnosis prior to death in the case of chronic diseases in rural areas is not generally available.

The infant mortality of 188.64 per 1000 is high, and maternal mortality is undoubtedly considerable though we are unable, on account of the facts already related, to give any statistical information which would give a reliable indication of the extent of this form of mortality. The reasons for the high infant and maternal mortality are not difficult to determine and are primarily due to:-

(a) Insufficient number of trained midwives.
(b) Disinclination amongst Moslem women in child birth to attendance by a doctor.
(c) Lack of maternity homes, and of antenatal and postnatal clinics.
(d) Sparcity of Child Welfare Centres.

This important question and its possible solution will be again dwelt on in another section of this Report.

The assistance rendered to the country by the Voluntary and Charitable Hospitals and Medical Institutions has been again a feature, and their cooperation with the Government has been most satisfying. The bulk of the Hospital cases are dealt with by them, and the Department of Health is therefore in a position to devote a greater part of its energies to purely Public Health functions.

The system of Hospital Committees which now control the non-technical services in Hospitals which previously were conducted by the Government has been extended to one further Hospital, and will operate in Haifa in 1926. The system has worked well and the Municipalities and the Committees have taken a marked interest in the control and in adding to the amenities of the Hospitals. In one instance the Committee have added balconies for heliotherapy treatment of tuberculosis and in another built a mortuary and servants rooms, while in a third considerable strides have been made towards completion of the unfinished Hospital building.

With the proposed extension of Maternity and Child Welfare Schemes both Government and Voluntary, the Department expects and will undoubtedly obtain, the cooperation and help, already given in several valuable instances, in this most important and necessary development in order that the general, the maternal and the infantile mortality in Palestine may be reduced to a level comparable to that in more advanced countries elsewhere.

2. Communicable Diseases.

There have been no serious epidemics of communicable disease with the exception of that of measles. This disease continues to be a source of anxiety and difficulty, and the very high case mortality in several of the outbreaks has been alarming. Typhus has occurred sporadically chiefly amongst immigrants, but its extension has been checked satisfactorily; it has been remarkable by its comparative absence amongst the population as a whole both urban and rural.

The incidence of plague has been nil. The re-appearance of this disease,. however, is to be expected again in Jaffa-Tel Aviv and in Haifa. The existing conditions are undoubtedly favourable to the dissemination of the disease on account of the opportunities of close association between rat and man. The overcrowding and the highly unsatisfactory and insanitary type of barracks, the construction of which no Government regulation nor administrative action seems able to prevent, present a grave problem for the Sanitarian not only in connection with the dissemination of plague but also of the enteritics and other communicable diseases.

There have been no cases of small pox. This is particularly satisfactory in view of the prevalence of this disease in Egypt and Syria, and may be ascribed to the comparative completeness of the measures of vaccination that have been carried out in Palestine, and to the efficacy of the calf lymph prepared at the Department's Vaccine Institute.

The incidence of the enterics has again been very prevalent amongst the Jewish community, which, apart from a possibly greater susceptibility amongst newly arrived immigrants, is exposed to conditions in new colonies and suburbs of the larger towns which are of a temporary nature and provided only with temporary and frequently primitive sanitary installations, and water supplies open to contamination. The incidence in Jerusalem where water conditions were bad during 1924 and 1925 shows an increase amongst both Arabs and Jews. A great deal has been done in improvement of the conditions in some of the existing colonies, but with the steady stream of immigration, problems continually arise in newly found colonies, and it is becoming increasingly evident that:

(a) Colonies should be laid out in advance of occupation by immigration with water and sanitary installations by the body or organization that is promoting the colonization group, and the construction and formation of the buildings of the colony be not allowed until this has been done. The Government has such powers under existing Ottoman Law and Town Planning Ordinance, and

(b) Outside Municipal areas Local Councils in settlements under the Local Councils Ordinance should be formed under Government supervision, and sanitary Bye-Laws drawn up and enforced by the Council, and sanitary labour employed.

Given the constant new formation of barrack suburbs and colonies, it is difficult to see what radical improvement in the existing situation is to be achieved without the strict adoption of such measures.

Measles has again been the most prevalent infectious disease during the year, confined almost entirely to the Arab population. The mortality in certain village epidemics has been very high due to the severity of the disease and its complication of pneumonia and gastro-enteritis. Mobile epidemic Hospitals have been opened up in several severe epidemics and have undoubtedly done good, but the rapidity of the spread of the disease from village to village and the considerable numbers of cases to be dealt with have shown that, without a very extensive and expensive organization, the case incidence and mortality cannot be materially reduced in an epidemic in a rural area.

Syphilis is prevalent in certain villages to a marked degree, but appears to be confined to those villages or groups of villages. It is of a mild type, is not usually venereal, and tertiary manifestations are remarkably absent. The Special Clinic that has been operating in the Hebron district for 15 months has been very successful, attendances by both sexes have been in greater numbers than could be dealt with, and the continuance of attendance for the full course of treatment has been a marked feature and has resulted in a proportionately high number of relative cures. For the 15 months the number under treatment has been 1023 and number who have completed treatment 666. In other affected areas, treatment is given only at established Government or Voluntary Clinics, but it is hoped to open a second special clinic during 1926.

Tuberculosis is prevalent in certain districts and notably in Nablus, while a considerable incidence exists generally throughout the country, amongst both Arabs and Jews. A complete survey of the tuberculosis incidence, and the predisposing conditions is necessary, and is proposed. It will then be possible to make provision for preventive measures and to consider the question of treatment, the facilities for which at present are inadequate.

The Malaria incidence has continued to decline throughout the country and is now negligible in towns. Routine anti-larval measures have continued without any relaxation, and slowly permanent measures are taking the place of oiling of water collections and other temporary expedients. In the villages very considerable advances have been made, and the cistern closure and sealing has been most satisfactorily developed, with the help of the villagers themselves. A considerable number of minor works have been initiated by Medical Officers or by the staff of the Malaria Research Unit and put into effect without cost to Government and by the Arab villagers or Jewish Colonists. Major works have been developed in several areas notably at Kabbara, Beisan, Jericho, and plans for the reclamation of the marshy Kishon and Naamein areas are complete and will shortly be carried out by a large Jewish Corporation.

The Malaria Commission of the League of Nations paid a visit of a fortnight to Palestine in May, and were shown examples of the various antimalarial measures and works carried out and proposed. An appendix to this Report gives a resume of the more important demonstrations. The visit was of great practical value to the Department and served both as an acknowledgement of work done by the Medical Officers of the Department and of the attached Units in the struggle against malaria, and as a stimulus to greater effort.

The facilities for treatment of Trachoma and other Eye Diseases have been still further developed during the year in close cooperation with the Ophthalmic Hospital of the Order of St. John of Jerusalem as outlined in last year's report. Medical Officers of the Government and special nurses are trained at the Hospital of the Order, conduct Ophthalmic Clinics in the Government Hospitals and Dispensaries in the various districts under the periodical inspection of a surgeon of the Hospital of the Order and carry out School Ophthalmic inspection and treatment.

C. INDUSTRIAL CONDITIONS.

The relations that industry, conditions of labour and housing bear to the general health of the community has been for some time a matter of serious consideration by the Department. It has been possible under Municipal Bye-Laws based on the Ottoman Code to control all trades and industries in Municipal areas that are concerned in food and drink products or are likely to be a danger to the health of the public if not conducted under hygienic conditions.

Since 1919 the licensing of such industries has been effected by the Municipalities subject to conditions prescribed by the Department of Health. The result has been a great improvement in all old establishments and industries, and the achievement of a much higher standard in new ones.

The existing legislation, however, requires to be established on a more secure footing and the powers amplified in order that:

(a) Health control may be exercised over industries outside municipal areas;
(b) the principles of control be extended to include protection of the health of the labour employed as well as the protection of the public health from the dangers of the products of the industry.
(c) the expansion of the control to include industries not directly dealing with food and drink, or liable to affect the public health.

A Committee under the chairmanship of the Chief Secretary has been considering this, and other relevant matters, and the new draft Trades and Industries Ordinance has been discussed at length.

Under the new Ordinance the Department of Health will be responsible for the health conditions, hours of labour of children and, in certain specified industries, of adults, while in cooperation with the Department of Police it will exercise a wider control over industries as a whole.

D. HOUSING AND TOWN PLANNING.

The Town Planning Ordinance gives wide powers to the Government in regulating new construction, and in the laying out of new districts in towns. It is, however, somewhat difficult of application in certain rapidly growing towns such as, for instance, Tel Aviv, Haifa and Jerusalem. The Buildimgs Permit Sub-Committee, however, formed in each district under the Town Planning Committee, considers every new application for a building and has invariably a member of the Department of Health serving on it. The result has been that a very material improvement in construction and in Health conditions has resulted in the case of permanent buildings. It has, however, been a matter of very considerable difficulty to prevent the construction of temporary wooden buildings to house the newly arrived immigrants, and the problem of conversion of the temporary barrack into a sanitary and permanent building is one that the Government is faced with.

The obvious remedy is to provide workmen's dwellings on a larger scale but the necessary considerable credits required for the purpose of housing a continually expanding community, many of whom are in financial difficulties, are not forthcoming either from municipal or other sources.

While the control exercised over new construction of a permanent nature is advancing, the same advancement cannot be recorded in the case of the old, insanitary and overcrowded quarters in the larger towns. There is a tendency on the part of the inhabitants to seek house accommodation in the environs of the larger towns, but the new construction does not more than keep pace with the natural increase of the population. The result is that the old quarters of the larger towns show little improvement.

II. VITAL STATISTICS & EPIDEMIC DISEASE.

(a) Vital Statistics.

The population at 1st July 1925, was estimated to be approximately 823,000 distributed as follows:-

Settled in Towns and Villages.	719,508	(Estimated by addition of excess of Births over Deaths and excess of immigration over emigration to Census figure of 1922).
Nomadic.	103,331	
Total.	822,839	

The classification of the population by religious creeds is as follows:-

Moslems.	Christians.	Jewish.	Other Religions.	Total.
619,225	74,781	120,559	8,274	822,839

Births, Deaths and Infantile Mortality.

Calculations of Birth and Death ratios have been made upon the settled population figure of 719,508. Birth and Death notifications from nomadic tribes are naturally very incomplete and this section of the population is therefore excluded from the statistical figures and calculations which follow.

35,471 births were registered and 19,611 deaths.

Deaths under one year of age were 6,693.

Birth, Death and Infantile mortality rates are shown in the following comparative table:-

	Estimated population.	Death ratio per 1000 of population.	Birth ratio per 1000 of population.	Infantile mortality ratio.
1923.	662,013	25.67	47.43	184.76
1924.	681,245	25.04	51.31	184.83
1925.	719,508	27.55	49.31	188.64

It is not possible to make any reasonably accurate estimation of the populations of towns and localities. There are no reliable records of the distribution of 60,000 immigrants who have entered the country since the census, nor are municipal registers an accurate index of the total populations in towns. A critical examination of Birth and Death ratios of the smaller divisions of the population is under the circumstances of little value and is not included in this report.

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Registration of Births and Deaths.

Registration of Births and Deaths is compulsory and is effected at District Offices of the Department of Health. The notification forms used in villages were revised and the new forms brought into use during the course of the year.

The issue of Certificates of Registration which were introduced in 1924 is now the general practice.

Special arrangements were made for the registration of Births and Deaths which occurred prior to 1918. Registration is effected on documentary evidence specified by the Attorney General. Where these documents are certificates of personal knowledge of the facts of a Birth or Death they must be given before a Public Notary.

BIRTHS AND DEATHS - 1925.

	Totals for Towns.	Total for Districts excluding Beersheba.
DEATHS.		
Under 1 month.	772	964
1 month to 1 year.	1573	3384
1 to 2 years.	1152	2384
2 to 5 years.	642	1811
5 to 10 years.	169	434
10 to 20 years.	235	531
20 to 50 years.	1002	1733
Over 50 years.	1217	1600
Unknown.	-	8
Total Deaths 1925.	6762	12849
Total Deaths 1924.	5803	11869
BIRTHS.		
Total Births 1925.	12079	23400
Total Births 1924.	12209	22746
INFANTILE MORTALITY.		
Rate per 1000 Births 1925	194.13	185.84
Rate per 1000 Births 1924	179.45	187.72

Religions.	Christians.	Moslems.	Jews.	Others.	Totals	Percentage.
Populations.	74781	515894	120559	8274	719508	
DEATHS.						
Under 1 month.	100	1411	214	11	1736	8.85
1 month to 1 year.	351	4245	311	50	4957	25.27
1 to 2 years.	233	3007	241	55	3536	18.03
2 to 5 years.	127	2148	138	40	2453	12.50
5 to 10 years.	27	517	49	10	603	3.07
10 to 20 years.	64	646	39	17	766	3.90
20 to 50 years.	188	2191	306	50	2735	13.94
Over 50 years.	315	1950	516	36	2817	14.37
Unknown.	1	4	3	-	8	.04
Total Deaths.	1406	16119	1817	269	19611	
Deaths per 1000.	18.80	31.24	15.07	32.51	27.25	
BIRTHS.						
Total Births.	2777	28211	4000	491	35479	
Births per 1000.	37.15	54.68	33.17	59.34	49.31	
INFANTILE MORTALITY.						
Total Deaths under 1 year	451	5656	525	61	6693	
Rate per 1000 Births.	162.40	200.48	131.25	124.23	188.64	

Midyear estimation of local populations has not been made vide Section II para.(a) of Report.

(b) Epidemic Service.

No changes have been made in organization or procedure.

Mobile Epidemic Hospital Units were in use for treatment of severe cases of measles in districts as follows:- Bir Zeit, Ramallah District; Dahrieh, Hebron District; Kubab, Ramleh District. In a number of other villages temporary clinics were established.

(c) Training of Personnel.

No classes of instruction in sanitary duties were held this year. Nearly all sub-inspectors have attended courses and passed the requisite examinations.

(d) Disinfection.

Work accomplished in connection with cases of infectious disease is as follows:-

293 houses were disinfected for diseases conveyed by vermin and 4587 for other diseases. 417,542 articles or bundles of clothing were dealt with in the course of these disinfections.

Special measures were taken in Degania to stamp out a focus of typhus infection which appeared to be established there. The whole population and all dwelling houses were systematically disinfected with the satisfactory result that no further cases of typhus occurred. Two settlements adjacent to Degania were dealt with in the same manner on account of the frequency of communication between the inhabitants and the infected village.

(c) Infectious and Communicable Diseases.

No cases of plague, cholera or small pox occurred. A considerable increase in the number of cases of the enteric fevers was recorded, mainly from the towns of Jerusalem, Tel Aviv, Jaffa, Haifa, Nazareth and Safad.

807 cases with 76 deaths were reported for the whole country as against 329 cases and 35 deaths in 1924. Dysentery was more prevalent particularly in Tel Aviv, Tiberias, Haifa and Jaffa. 998 cases with 42 deaths were notified compared with 726 cases and 27 deaths in 1924.

An increase is also recorded of typhus and relapsing fever. 50 cases of typhus were reported. None of these were fatal. 37 cases and 1 death occurred in 1924. The mildness of the disease and the occurrence of atypical cases has been commented on in previous annual reports. The presence of head or body lice though often in small numbers and the occurrence of occasional severe and clinically typical cases is against any presumption that the disease is other than true typhus. Diagnosis in all cases was confirmed by agglutination of Bacillus Proteus X19. The season of greatest incidence is as in past years, during the summer months. A possible explanation of this unusual feature is that personal cleanliness at this time of the year suffers owing to the necessity of observing strict economy of water used for domestic purposes.

Twenty two cases of relapsing fever were reported compared with eleven in 1924. In neither year were there any deaths from this disease.

40 cases of diphtheria with 10 deaths were notified. Jaffa and Jerusalem towns were mainly affected. The disease was more prevalent than in 1924 when 24 cases and 1 death were reported. The high proportion of deaths to cases is attributable to delay in seeking medical attention.

Measles was less prevalent. 3996 cases were reported compared with 5997 in 1924. The case fatality rate was 10% against 13% in the previous year. Convalescent serum was employed on several selected occasions without any marked benefit being noted. The use of whole blood under the difficult conditions of village practice was not advocated.

Scarlet fever shows signs of increasing. 57 cases were notified compared with 7 in 1924. Only 1 death occurred. The increased incidence is probably partly due to improved diagnosis. The majority of cases are extremely mild and quite frequently the disease is not recognised by practitioners until desquamation appears.

Of 23 cases of Schistosomiasis, 8 contracted the infection in Palestine. All were infected with Schistosoma haematobium contracted in Jaffa District. In the endemic foci surrounding Jaffa Town, copper sulphate in solution was used with success to eliminate the intermediate host. Birkets (tanks) in orange gardens and collections of water in drying streams were treated on the lines recommended by the Commission which studied this question in Egypt.

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4 cases of Cerebro-Spinal Meningitis occurred, 10 of acute anterior Poliomyelitis and 2 of Encephalitis Lethargica.

2 cases of Undulant Fever were notified.

(f) Vaccination against Small Pox.

76,423 vaccinations were performed. The percentage of success in cases of primary vaccination of which results were observed was 74% in towns, and 84% in villages.

CASE & DEATH INCIDENCE OF INFECTIOUS DISEASES BY MONTHS - 1925.

	January.		February.		March.		April.		May.		June.		July.		August		September.		October.		November.		December.		TOTAL.	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Cerebro Spinal Fever.	-	-	-	-	1	1	-	-	1	1	1	-	-	-	-	-	-	-	-	-	1	1	-	-	4	3
Chicken Pox.	8	-	10	-	44	-	20	-	32	-	35	1	21	-	25	-	20	-	1	-	9	-	23	-	248	1
Diphtheria.	2	1	-	1	1	-	1	-	3	-	-	-	5	1	2	1	2	-	7	4	8	-	9	2	40	10
Dysentery all classes.	16	-	9	1	14	1	46	3	124	6	108	5	84	2	93	9	106	2	118	7	155	4	125	2	998	42
Typhoid Fever.	12	2	34	3	22	2	9	1	31	2	52	3	70	6	59	6	97	12	118	14	112	8	89	11	705	70
Paratyphoid Fever.	3	-	7	-	3	-	3	-	9	-	7	-	18	1	9	4	14	-	7	1	11	-	11	-	102	6
Erysipelas.	8	1	12	3	10	-	8	2	8	1	11	2	10	2	9	1	11	1	12	-	13	2	11	-	123	15
German Measles.	-	-	-	-	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	-
Measles.	428	40	372	52	475	31	277	34	196	26	272	5	277	28	189	21	93	10	267	39	487	104	663	146	3996	536
Mumps.	1	-	1	-	10	-	-	-	12	-	1	-	4	-	5	-	2	-	55	-	27	-	45	-	163	-
Plague.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Puerperal Fever.	1	-	3	1	-	-	1	1	-	-	2	-	4	1	-	-	-	-	3	-	-	-	-	-	14	3
Relapsing Fever.	-	-	-	-	1	-	3	-	2	-	2	-	1	-	4	-	2	-	1	-	3	-	3	-	22	-
Scarlet Fever.	1	-	-	-	1	-	4	-	1	-	3	-	10	-	10	-	7	-	3	-	10	1	7	-	57	1
Small Pox.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Typhus.	1	-	3	-	2	-	1	-	7	-	6	-	9	-	2	-	6	-	9	-	2	-	2	-	50	-
Whooping Cough.	108	9	36	1	39	2	85	4	207	1	120	3	90	2	51	-	34	-	24	1	61	7	47	2	902	32
TOTALS.	589	53	487	62	630	37	458	45	633	37	620	19	603	43	458	42	394	25	625	66	899	127	1035	163	7431	719

INCIDENCE OF INFECTIOUS & CONTAGIOUS DISEASE OF A CHRONIC OR SPECIAL CHARACTER - 1925.

DISEASE.	JERUSALEM DISTRICT.		JAFFA DISTRICT.		HAIFA DISTRICT.		SAMARIA & GALILEE DISTRICT.		TOTAL FOR DISTRICTS.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Anthrax.	-	-	-	-	1	-	2	-	3	-
Schistosomiasis.	4	-	18	-	1	-	-	-	23	-
Blackwater Fever.	-	-	-	-	10	3	-	-	10	3
Epidemic Ulcer.	-	-	-	-	76	-	-	-	76	-
Gonorrhoea.	10	-	6	-	425	-	1	-	442	-
Hydrophobia.	-	-	2	2	-	-	1	1	3	3
Influenza.	18	1	51	4	436	20	106	2	611	27
Leprosy.	10	5	1	-	3	-	2	1	16	6
Lethargica Encephalitis.	-	-	1	1	1	1	-	-	2	2
Pneumonia.	372	317	215	180	115	35	106	51	808	583
Acute Polyomyelitis.	-	-	1	1	9	-	-	-	10	1
Tetanus.	9	3	12	6	10	6	6	1	37	16
Tuberculosis.	82	80	95	80	325	28	68	28	570	216
Syphilis.	1223	-	138	-	276	2	24	-	1661	2
Undulant Fever.	2	-	-	-	-	-	-	-	2	-
TOTAL.	1730	406	540	274	1688	95	316	84	4274	859

No cases have occurred of the following diseases:- Cholera, Dengue, Glanders, Actinomycosis, Filariasis, Beri Beri, Ankylostomiasis, Pellagra and Leishmaniasis.

VACCINATIONS - 1925.

	Results of Observations.	Towns.	Villages.	Persons entering Palestine.		Totals.
				Haifa Port.	Jaffa Port.	
Vaccinations.	Successful.	7630	20931	2471	3081	34113
	Unsuccessful.	2670	3909	5983	14917	27479
	Not observed.	1934	1921	2882	2093	8830
Re-Vaccinations.	Successful.	750	1992	-	152	2894
	Unsuccessful.	657	712	-	1244	2613
	Not observed.	225	138	-	131	494
TOTALS.		13866	29603	11336	21618	76423

(g) Malaria and Antimalaria Measures.

1. Decrease of Malaria.

It has been satisfactory to note the continuation during 1925 of the decline in the malaria incidence, which commenced after the Occupation.

While the Department is now placing most reliance on a reduction of the spleen rate among children of school age as reflecting the diminution of malaria throughout the country, the figures for (i) deaths from malaria, (ii) dispensary attendances and (iv) case incidence, may be quoted in addition to those of (iii) the spleen rates.

(i) Deaths from malaria.

For the whole of Palestine, the deaths from malaria of which the Department has records have been as follows:-

1920	1921	1922	1923	1924	1925
526	94	67	78	33	13

So far as any reliance can be placed on such figures they indicate a satisfactory diminution in the number of deaths from the disease. The figures for Jerusalem town are more reliable and are as follows:-

1919	1920	1921	1922	1923	1924	1925
35	30	17	5	5	2	2

(The two deaths in 1925 were both due to malignant malaria contracted near Jericho; the patients, however, died in Jerusalem).

(ii) Dispensary attendances.

The percentage of patients suffering from malaria treated in the dispensaries of Palestine serves as a useful index figure to the relative amount of malaria in the whole country year by year, since there are more than fifty institutions scattered throughout the various towns, where such patients are treated.

The figures for the last four years are as follows:-

Year.	Total No. of patients.	No. of patients suffering from malaria.	Percentage of malaria patients.
1922.	283,156	20,297	7.2%
1923.	270,945	13,280	4.9%
1924.	285,215	11,732	4.1%
1925.	339,795	7,249	2.1%

(iii) Spleen rates.

In November 1925, the Medical Officers of the Department carried out a spleen examination of more than 40,000 children. No such extensive spleen survey had been made previously but the figures obtained will form a useful basis of comparison for future years.

Of 6,549 school children examined in the towns, 245 had slightly enlarged, 51 moderately enlarged and 6 greatly enlarged spleens, giving a spleen rate of 4.6%.

Beersheba and Nablus were the only towns where the spleen rate was nil. Beisan had the highest rate of any town, but the Beisan spleen rate has shown a remarkable annual decrease thanks to the drainage of the swamps near the town. In 1922 the rate was 48%, in 1923, 34%, in 1924, 24% and in 1925, 16%.

The Jerusalem records go back the furthest. In 1904-05 Cropper (Journal of Hygiene, 1905) found rates of 36 to 60% in different schools, in 1912 Brunn (Zeitschrift fur Hygiene und Infektionskrankheiten, 1913) gave the rate as 59%, in 1919 Yofe (Revue de Medecine et d'Hygiene Tropicales, 1920) as 44%, early in 1922 the School Medical Record cards showed the rate to be 22% and in November 1925 it was 0.8%.

The following are Dr. Yofe's rates taken between December 1918 and February 1919 and the Government Medical Officers rates taken in November 1925 for certain other towns:

	1918-19.	1925.
Jaffa.	16.6%	4.9%
Hebron.	37.0%	0.8%
Tiberias.	44.3%	2.3%
Haifa.	38.8%	5.6%
Safad.	68.7%	10.0%

The following table gives the result for village children, of the spleen survey carried out in November 1925:-

	No. of children examined.	No. of enlarged spleens.			% of enlarged Spleens.
		1	2	3	
Under 1 year of age.	5807	321	61	13	6.8
1 to 5 years.	11942	1024	388	79	12.48
Over 5 years.	15936	1340	634	185	13.54
TOTAL.	33685	2685	1083	277	12%

(Note. Under "No. of enlarged spleens"
"1" = slight enlargement - palpable on inspiration to one finger breadth below costal margin.

"2" = moderate " - from one finger breadth below ribs but not reaching umbilicus.

"3" = great " - to right of or below umbilicus.)

There are no previous figures with which to compare this table, but figures for many individual villages might be cited, which show a progressive decrease in the spleen rate. Thus for Beit Jibrin, where annual clearance of vegetation and canalization of the neighbouring wadi has been practised since 1920, the spleen rate in 1920 was 91%, in 1922, 43.2% and now is 19.3%.

With regard to the Jewish rural population, Dr. Yofe on an examination of 2806 persons in the winter of 1918-19 found a rate of 50.7%. In 1924, the Malaria Research Unit examined 5486 persons and obtained a rate of 20.1%.

(iv) Case Incidence.

The following are the figures of the Malaria Research Unit of the monthly case incidence of malaria in the Jewish settlements under its supervision.

	1922.	1923.	1924.	1925.
Average monthly population under observation.	6725	10042	16466	22283
Average monthly number of cases of malaria.	382	286	173	182
Average monthly malaria incidence.	5.7%	2.9%	1.1%	0.8%

2. Anti-mosquito measures carried out during 1925.

The routine measures of oiling, closure and mosquito proofing of cisterns and canalization and cleaning of wadis have been carried out as heretofore. The striking feature of the year has been the general adoption by the hill villages of the mosquito-proof iron cover for rain water cisterns. Several thousands of such covers were fitted and the different types designed by the Medical Officers of the various sub-districts have all proved satisfactory. Simplicity, durability and cheapness are essential points in their design and it should soon be possible to adopt an efficient standard type of cover for the whole country.

52½ tons of "oil" were used during the year as compared with 50 tons the previous year. The increase in the consumption of oil has been chief in the towns with rain water cisterns.

Owing to the low rainfall (308 mm.) during the winter 1924-25, the water level in many cisterns got so low in the autumn that the pumps became useless and were dismantled by the people in order to draw out the remaining water by bucket and rope. These cisterns were therefore no longer mosquito proof and "oiling" had to be resorted to.

In Jerusalem 4 cases of primary benign tertian malaria occurred in October and one case in November. The patients all lived in the same part of the town, most of them within a few yards of each other, and the mosquito-proofing of the cisterns was found to have been neglected in the area. Such occurrences serve as a reminder that any great neglect of the antilarval measures in the towns would soon be followed by severe outbreaks of the disease.

Several large drainage and land reclamation schemes were prepared and under consideration during the year, but Kabbara was the only large swamp area on which work was actually in progress, the work there being undertaken by the Palestine Jewish Colonisation Association. Of the smaller schemes that at Jericho was completed while at Cherkas and Hedera and on the Wadis Ishkar and Addas considerable progress was made. The schemes for draining the Tantura and Sanour swamps were held up pending the results of investigations as to whether the agricultural wells at the former place and the village rain water cisterns at the latter were not primarily responsible for the malaria in those localities. North of the Huleh marshes - where the spleen rate of the village children averages 95% - much minor drainage work was done and irrigation controlled. The area was included in Palestine only two years ago but a start has been made and good results are hoped for in time.

The Controller of the Malaria Survey Section proceeded on leave to America in the first part of the year and did not return to Palestine during the period covered by the Report.

A summary of the activities of the Malaria Research Unit forms an appendix to this Report.

ANTIMALARIA STATISTICS FOR THE YEAR 1925.

Towns of Palestine.

Month.	No. of fresh possible breeding places discovered.				No. of Places.							No. of prosecutions.	No. of kilos of Solar oil used.	No. of kilos of Crude oil used.
						Breeding:								
	Wells.	Cisterns.	Cesspits.	Other Places.	Inspected.	Anopheles.	Culex.	Anopheles and Culex.	Oiled.	Made mosquito-proof by sealing, covering or other means.	To which pumps fitted.			
January.	37	26	1037	531	84296	49	271	20	40713	935	31	13	2109	108
February.	4	66	860	201	89154	20	212	6	40319	470	38	5	1932	135
March.	5	77	815	132	92983	26	305	20	45194	531	47	23	2160	125
April.	39	20	566	239	108754	36	485	12	47154	189	115	61	2237	108
May.	16	200	534	344	113577	70	839	91	49167	1697	95	24	2667	117
June.	5	24	519	15	103837	66	870	71	46323	743	42	18	2479	123
July.	12	1	39	553	120927	54	1071	3	51118	375	313	54	2630	268
August.	42	215	1474	1411	124112	74	1669	11	51958	658	52	61	2276	399
September.	8	61	364	81	129159	33	1527	8	52013	657	29	12	2396	125
October.	7	25	149	58	129362	37	1596	6	51234	305	12	47	2358	106
November.	3	24	27	91	124830	32	1186	1	50846	239	7	50	2217	97
December.	79	19	531	204	133401	87	1521	1	52718	605	223	10	2782	168
TOTALS.	257	758	6915	3860	1354392	584	11552	250	578757	7404	1004	378	28243	1879

ANTI-MALARIA STATISTICS FOR THE YEAR 1925.

Villages of Palestine.

Month.	No. of visits to villages.	No. of new wells and cisterns found.	No. of other new possible breeding places found.	No. of places in which mosquito larvae found.	No. of places oiled.	No. of places closed, repaired and made mosquito proof.	No. of persons treated with quinine.	No. of prosecutions.	No. of kilos of Crude oil used.	No. of kilos of Solar oil used.	Grammes of quinine expended.
January.	1182	39	57	436	13182	205	54	-	6	1222	317
February.	1185	153	38	368	14183	245	12	30	13	1490	80
March.	1221	106	146	402	16938	261	35	57	18	1690	277
April.	1299	236	28	316	18707	1951	62	94	14	2267	422
May.	1281	175	161	487	18073	1635	56	97	11	2320	296
June.	1385	49	11	387	19996	289	6	152	3	2362	48
July.	1300	81	24	342	18428	275	97	85	10	2042	766
August.	1290	45	7	301	16703	259	122	72	12	1886	725
September.	1315	143	2512	704	16040	659	185	84	2	1770	1194
October.	1300	77	19	333	13942	1060	62	198	2	1532	486
November.	1279	85	47	726	14161	795	15	33	2	1586	320
December.	1760	16	23	399	19036	175	153	41	2	2240	1136
TOTALS.	15797	1205	3073	5201	199389	7813	859	943	95	22407	6067

(h) Rabies.

Three deaths from hydrophobia occurred. This is the lowest figure recorded since 1921. There were 13 deaths in 1923 and 9 in 1924.

The measures taken to supply carbolised vaccine to ten treatment centres throughout the country together with the activity of Police, and Municipal authorities against stray dogs in towns and of the Agricultural authorities against jackals in rural districts have undoubtedly contributed to reduce mortality from this disease.

1032 persons reported for advice or treatment at antirabic centres during the year.

13,913 animals chiefly dogs were destroyed during the year by the various authorities engaged in this work.

III. MEDICAL SECTION.

(a) Government Hospitals.

The Government policy of devolution has been continued in respect of hospitals. Of the eight Government general hospitals, those at Gaza, Nablus, Jaffa and Beersheba had become municipal hospitals by the end of 1924, and that at Acre became a municipal hospital with a local committee in April 1925. The Government Hospital at Tulkarem was closed in February 1925 as the Municipality was unable to contribute to its support. At the close of the year negotiations were still in progress with the Municipalities of Jerusalem and Haifa and at the latter place they have since proved successful and the hospital is to become a Municipal Hospital. The local hospital committees have shown considerable energy and at Gaza, Nablus, Jaffa and Acre have effected structural additions and improvements to the hospital buildings which would not have been done for many years had the hospitals remained entirely under Government control. The Nablus Committee have built large sun balconies to the hospital for the heliotherapeutic treatment of tuberculous children. The bed strength of the Haifa Hospital was increasedfrom 25 to 50 in December to provide accommodation for the sick and wounded Druze refugees from Syria.

The following are the numbers of patients admitted to the Government and Municipal Hospitals during the past seven years.

Year.	1919	1920	1921	1922	1923	1924	1925
Patients.	4738	5768	6602	6646	4905	4442	3939

12 Royal Air Force personnel, 501 police and gendarmes, 269 railway employees, 237 other Government employees and 198 prisoners were treated in the Government and Municipal Hospitals. In addition 669 prisoners suffering from minor or chronic ailments were treated in the Sick Detention Wards of the Central Prisons and 53 prisoners suffering from tuberculosis in the Tuberculosis Isolation Section of the Acre Central Prison.

(b) Government Dispensaries.

There were 14 Government Dispensaries and 5 Medical Inspection Rooms functioning during the year and a variable number of Village Clinics.

In the 1921 Departmental Report it was stated that some of the dispensaries were divided into sections to deal with special branches of medicine and that "it is the intention to develop these special sections in as many places as possible, particularly in connection with Infant Welfare and Ophthalmic Work".

This policy has now been put into effect. Ophthalmic Clinics have been established at six places - Gaza, Beersheba, Ramleh, Nablus, Tulkarem and Acre - and their work is described in Section III (f). Three Infant Welfare Centres (at Jerusalem, Ramallah and Nablus) were started during the year and three more (at Haifa, Acre and Ramleh) are to be opened later (vide Section III(e)).

At Hebron, the special clinic for syphilis (vide Section II(e)) which was started on an experimental basis has now become permanently established and small venereal diseases clinics exist at the ports of Jaffa and Haifa.

Facilities are also to be provided for the dispensary treatment of ambulant cases of leprosy who are not isolated in the Leper Home.

The policy of the Department is, thus, to concentrate its dispensary work on those matters which are of public health importance rather than to provide general medical relief which in most towns can be obtained from private doctors or charitable medical institutions.

The dispensary attendances (exclusive of village clinics) for the past seven years, have been as follows:-

Year.	1919	1920	1921	1922	1923	1924	1925
Attendances.	122703	142167	155523	173351	162827	189975	219281

The number of attendances at the village clinics increased from 5919 in 1924 to 14930. There were 11036 new patients of whom 235 were treated for malaria, 1811 for eye diseases and the remainder for other complaints. The village clinics are capable of development on useful lines and proposals are on foot to place in some of the larger villages specially trained nurses whose chief objects will be to reduce infantile mortality and promote the health of the children by carrying out midwifery, infant welfare, ophthalmic and school medical work, in addition to their other duties in the clinic.

(c) Voluntary Hospitals and Dispensaries.

During the year a large number of applications were received from private doctors and midwives and a few applications from charitable organizations, for permission to open small hospitals or nursing homes. The intention was usually to use a dwelling house - often the residence of the doctor or midwife - for the purpose. The opinion was formed that the opening of small hospitals of this description would be a retrograde step in the general improvement of the standard of hospital work which has taken place in Palestine. Permission, therefore, has invariably been refused unless the conditions of the Ottoman Law of the 7th May 1885, were complied with. This Law, among other conditions, lays down that a private hospital shall have not less than 20 beds for patients, but in certain instances, hospitals with as few as 12 beds have been sanctioned. To supplement the Law, a Departmental Circular was prepared towards the close of the year setting out in some detail the sanitary and other conditions with which hospitals and nursing homes should comply.

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An account of each of the hospital organizations in Palestine was given in last year's report. The following tables show the name and the amount of work carried out by each of the charitable hospitals in the country. They have continued to provide the mass of the population with adequate facilities for the treatment of general ailments and during the year have dealt with more than 26000 in-patients and nearly 280,000 out-patients.

Of the in-patients, nearly 10,000 were treated in the Hadassah Hospitals, 5000 in the various British Mission Hospitals and more than 4000 in the French Hospitals.

Special mention must be made of valuable assistance given to the Government by the Scottish Mission Hospital, Tiberias. Towards the close of the year there was serious fighting in Syria close to the north eastern part of the Palestine frontier and large numbers of Druze refugees entered Palestine. The Scottish Mission Hospital acted as a clearing hospital on the line of evacuation to the Government and Municipal Hospitals at Haifa, Nablus and Acre, where the sick and wounded Druzes were eventually cared for.

In addition to their hospital and dispensary work in the towns, the Hadassah Medical Organization and Kupat Cholim (the Sick Fund of the Jewish Co-operative Labour Association) have maintained a number of clinics in the Jewish rural settlements. In a few settlements the Colony Committee also has conducted a clinic.

The following figures indicate the work done by these clinics.

Organization.	No. of Clinics.	No. of new Patients.	No. of attendances.
Kupat Cholim.	30	48,340	206,255
Hadassah.	25	24,902	158,839
Colony Committees.	10	16,892	50,492
Totals.	65	90,134	415,586

(d) Training of Nurses.

The first regulations for the training of nurses in Palestine were issued in 1919 and since then, as the following figures show, more than 100 pupil nurses have completed their training and passed the examinations for the Nurses Certificate.

	1921	1922	1923	1924	1925	Totals.
Government & Municipal Hospitals.	-	1	6	8	5	20
Church Missionary Society's "	-	5	1	2	2	10
Scottish Mission Hospital.	-	-	-	1	1	2
London Jews Society Hospital.	2	-	-	-	3	5
St. Luke's Hospital.	-	-	-	-	1	1
Hadassah, Rothschild Hospital.	13	23	7	8	13	64
	15	29	14	19	25	102

The following numbers of pupil nurses successfully completed their examinations during 1925.

	1st Year.	2nd Year.	3rd Year.
Government & Municipal Hospitals.	5	3	5
Church Missionary Society's "	5	3	2
Scottish Mission Hospital.	-	5	1
Edinburgh Medical Mission Hospital.	2	-	-
London Jews Society Hospital.	1	2	3
St. Luke's Hospital.	2	-	1
Hadassah, Rothschild Hospital.	21	12	13
	36	25	25

At the end of the year there were 131 nurses under training at the various hospital training centres. Up to the present time only Jewish and Christian women have offered themselves for service but special arrangements are being made at the Watan Hospital, Nablus, to attract educated Moslem women as pupil nurses.

NAMES OF ORGANIZATIONS.	Bed Strength.	Matrons.	Trained Nurses.	Nurses under training.			Nurses not under training	T O T A L S.
				1st Year	2nd Year	3rd Year		
GOVERNMENT AND MUNICIPAL HOSPITALS.	261	6	17	15	5	3	19	65
VOLUNTARY HOSPITAL ORGANIZATIONS.								
Hadassah Medical Organization.	331	4	41	39	21	12	62	179
Church Missionary Society.	178	5	4	8	5	3	2	27
Kupat Cholim (Jewish Medical Organization).	97	3	4	-	-	-	7	14
Tutors and Protectors of the Jewish Community in the Holy Land, Amsterdam.	53	1	2	-	-	-	-	3
Misgab Ladakh (Private Donation).	34	1	-	-	-	-	4	5
Bicur Kholim Society.	70	1	-	-	-	-	19	20
Italian Hospital, Jerusalem.	60	1	13	-	-	-	-	14
London Jews Society.	62	1	4	3	1	2	-	11
The Order of St. John of Jerusalem in England.	45	2	-	-	-	-	2	4
International Moravian Church, London.	30	1	4	-	-	-	-	5
German Temple Society (Jaffa).	20	-	1	-	-	-	-	1
Jerusalem and the East Mission.	32	1	3	2	2	-	-	8
Italian Association, Haifa.	30	1	2	-	-	-	-	3
St. Charles Congregation (Haifa).	25	1	5	-	-	-	6	12
Edinburgh Medical Mission Society.	40	1	1	2	2	-	2	8
United Free Church of Scotland.	60	1	4	1	-	5	-	11
German Deaconess Hospital, Jerusalem.	50	1	6	-	-	-	6	13
Ezrath Nashim Women's Society Home for Insane and Incurable.	50	-	13	-	-	-	3	16
French Hospitals.	360	5	27	-	-	-	16	48
TOTALS. Voluntary Hospitals.	1627	31	134	55	31	22	129	402

GOVERNMENT AND MUNICIPAL HOSPITALS - 1925.

GENERAL AND INFECTIOUS.

Location of Hospital.	Bed Strength.	Admissions.					Deaths.	Discharges.	Daily average in Hospital.
		Moslems.	Christians.	Jews.	Other Religions.	Total.			
Jerusalem. Government.	80	633	350	47	1	1031	79	938	38
Haifa. Government.	25	372	157	180	-	709	34	666	19
Tulkarem. Government. (Closed Feb. 1925).	20	53	1	2	-	56	3	63	7.4
Acre. Municipal.	15	225	81	14	9	329	19	305	14.1
Nablus. Watan.	25	557	47	10	-	614	59	542	27
Jaffa. Municipal.	40	342	55	258	-	655	40	611	26.2
Gaza. Municipal.	18	340	7	1	-	348	19	331	7.9
Beersheba. Municipal.	8	204	4	9	-	217	5	212	5
Totals.	231	2726	702	521	10	3959	258	3668	18.075
PRISON SICK DETENTION WARDS.									
Jerusalem.	20	184	10	7	-	201	1	199	8
Acre.	15	420	37	8	3	468	-	471	17
Totals.	35	604	47	15	3	669	1	670	12.5

GOVERNMENT DISPENSARIES & CLINICS - 1925.

Location.	Total Number of Attendances.	New Cases.								
		Total new cases.	By Diseases.			By Religions.				
			Malaria.	Eye Diseases.	Other Diseases.	Moslems.	Christians.	Jews.	Other Religions.
Jerusalem Dispensary.	10902	6154	20	112	6022	3587	1677	890	-
Ramallah "	230	223	-	2	221	165	58	-	-
Hebron "	6481	4514	114	321	4079	4327	166	21	-
Beersheba "	15646	3993	-	588	3405	3774	186	33	-
Jaffa "	7501	4279	278	633	3368	3663	344	272	-
Ramleh "	26142	8150	320	2695	5135	6545	1525	80	-
Gaza "	13230	5239	47	771	3421	4707	529	3	-
Majdal "	2323	2067	75	258	1734	2031	36	-	-
Haifa "	12585	5551	386	358	4807	3022	1285	1244	-
Acre "	3456	2805	301	124	2380	1906	751	65	83
Tulkarem "	71315	7653	111	2820	4722	7370	274	9	-
Nablus. "	36139	5164	8	2554	2602	4832	227	32	73
Jenin "	3899	3518	240	528	2750	3217	301	-	-
Beisan "	3145	2316	95	677	1544	2059	186	71	-
Kantara Railway Medical Inspection Room.	4093	1375	4	284	1087	847	522	6	-
Nazareth Medical Inspection Room.	760	538	2	6	530	177	342	19	-
Tiberias " " "	897	437	34	13	390	260	81	96	-
Safad " " "	254	227	4	18	205	150	53	23	1
Bethlehem " " "	283	283	-	7	276	109	173	1	-
TOTALS.	219281	64486	2039	13769	48678	52748	8716	2865	157

Name and Location of Hospital.	Bed Strength.	Admissions.					Deaths.	Dis-charges.	Daily average in Hospital.	Remarks.
		Moslems	Christians.	Jews.	Other Religions	Totals				
JERUSALEM.										
Ophthalmic Hospital of the Order of St. John of Jerusalem.	45	1347	242	31	-	1520	-	1506	38	
St. Louis (French) Hospital.	150	397	756	4	-	1157	32	1114	40	
Italian Hospital.	60	237	127	10	1	375	9	389	21	
Rothschild (Hadassah) Hospital.	121	24	16	2894	-	2934	165	2758	116	
English Mission Hospital (London Jews Society).	62	12	75	983	-	1070	14	1056	44	
Shaare Zedek Hospital.	53	3	-	919	-	922	138	797	38	
Misgab Ladach Hospital.	34	-	-	629	-	629	23	604	24	
Bicur Cholim Hospital.	70	3	4	860	-	867	71	800	45	
Leper Hospital (International Moravian Society).	30	6	3	1	-	10	5	7	29	
Deaconness (German) Hospital.	50	281	495	66	-	842	34	816	31	
Convalescent Home, Motza.	30	-	-	42	-	42	-	45	30	
BETHLEHEM.										
Swedish Hospital.	36	27	94	-	-	121	2	134	14 x	x Closed from 1-9-25.
French Hospital.	70	273	762	-	-	1035	33	1006	38	
HEBRON.										
Church Missionary Society Hospital.	18	236	-	-	-	236	2	245	8	
JAFFA.										
Hadassah Hospital.	104	-	-	3577	-	3577	150	3380	101.8	
Church Missionary Society Hospital.	57	-	-	-	-	491	6	485	17.4	
French Hospital.	90	-	-	-	-	1316	45	1248	45.6	
German Hospital.	20	-	69	-	-	69	4	62	2.8	
Kupat Cholim Hospital, Tel Aviv.	13	-	-	225	-	225	-	225	12.6	

VOLUNTARY HOSPITALS - 1925 (Continued).

Name and Location of Hospital.	Bed Strength	Admissions.					Deaths.	Discharges.	Daily average in Hospital	Remarks.
		Moslems.	Christians.	Jews.	Other Religions.	Totals				
GAZA.										
Church Missionary Society Hospital.	63	-	-	-	-	861	17	839	21.1	
HAIFA.										
St. Luke's (Jerusalem and the East Mission) Hospital.	30	231	147	131	-	509	13	489	13.6	
Hadassah Hospital.	52	35	14	2012	-	2061	50	2014	46.6	
Italian Surgical Hospital.	30	113	81	69	-	263	11	253	12.2	
German Hospital.	25	119	184	468	-	771	10	749	20.3	
NABLUS.										
Church Missionary Society Hospital.	45	780	71	-	-	851	27	837	23	
NAZARETH.										
Edinburg Medical Mission Hospital.	40	411	200	-	-	611	22	591	26	
French (Soeurs de Charité) Hospital.	50	298	408	4	-	710	16	701	18	
TIBERIAS.										
United Free Church of Scotland Hospital.	60	-	-	-	-	836	26	811	41	
Kupat Cholim Hospital.	13	-	-	359	-	359	1	357	11	
SAFAD.										
Hadassah Hospital.	54	113	18	913	-	1044	37	996	43	
AIN HAROD.										
Kupat Cholim Hospital.	32	1	-	554	-	555	-	518	25	
TOTALS.	1607	4847	3766	14751	1	26369	963	25332	32.16	

Name of Dispensary or Clinic.	Total attendances.	Number of new Patients.								Remarks.
		Totals	By Diseases.			By Religions.				
			Malaria.	Eye Diseases	Other Diseases	Moslems.	Christians.	Jews.	Other Religions	
JERUSALEM.										
Ophthalmic Hospital of the Order of St. John of Jerusalem.	81526	16639	-	16639	-	10815	3382	2442	-	
St. Louis (French) Hospital.	24207	11178	118	2520	8540	6013	4161	984	-	
Italian Hospital.	6276	3120	116	65	2939	1505	1023	592	-	
Hadassah (Rothschild) Hospital.	118209	25296	385	3796	21115	240	173	24883	-	
English Mission Hospital (London Jews Society).	30623	14268	10	2247	12011	180	795	13293	-	Re-opened on 12-10-25.
Shaare Zedek Hospital.	15074	10924	-	-	10924	336	159	10429	-	
Mizgab Ladach Hospital.	9195	5545	-	149	5396	220	-	5325	-	
Old Bicur Cholim hospital.	5855	4314	267	1	4046	13	1	4300	-	
Deaconess (German) hospital.	5530	2421	-	161	2260	650	766	1005	-	
Armenian Convent Dispensary.	2968	929	156	159	614	-	929	-	-	
Kupat Cholim Dispensary.	21997	7494	26	-	7468	-	-	7494	-	
Moslem Polyclinic.	3702	2166	19	70	2077	2130	34	2	-	
New Bicur Cholim Hospital.	5438	2059	1	-	2058	-	-	2059	-	Opened 1-8-25
BETHLEHEM.										
French Hospital.	19705	9125	-	3706	5419	4070	5055	-	-	
Swedish Hospital.	1811	841	72	44	725	176	663	-	-	Closed 20-8-25 indefinitely.
HEBRON.										
Church Missionary Society Hospital.	10325	5107	-	1352	3755	5073	18	16	-	
Hadassah Dispensary.	8302	2329	-	659	1670	1441	1	887	-	Closed in Apr.
JAFFA.										
Church Missionary Society Hospital.	8849	4472	459	867	3146	-	-	-	-	Closed in Aug.
Hadassah Hospital.	95438	21385	263	5563	15559	22	1	21362	-	

VOLUNTARY DISPENSARIES & CLINICS - 1925. (Continued).

Name of Dispensary or Clinic.	Total attendances.	Number of New Patients.								Remarks.
		Totals	By Diseases.			By Religions.				
			Malaria.	Eye Diseases	Other Diseases	Moslems.	Christians.	Jews.	Other Religions	
JAFFA (Continued).										
French Hospital.	17235	2485	3	574	1908	-	-	-	-	
Kupat Cholim Dispensary.	133064	44562	530	9512	34520	696	-	43866	-	
St. Georges' Dispensary.	1574	1270	60	143	1067	189	1081	-	-	
Jewish Medical Organization Neve Zedek Dispensary.	16725	3052	-	680	2372	-	1	3051	-	
" " Neve Shalom "	8552	1648	-	792	856	2	1	1645	-	
Agoudat Israel Dispensary.	18768	5248	284	1467	3497	167	1	5080	-	
GAZA.										
Church Missionary Society Hospital.	4291	2405	49	233	2123	2219	181	5	-	
Hadassah Dispensary.	2109	1086	-	172	914	618	330	138	-	
HAIFA.										
St. Luke's (Jerusalem and the East) Hospital.	2735	1324	100	97	1127	481	588	181	74	
Hadassah Hospital.	46702	11967	68	4520	7379	438	246	11283	-	
Italian Hospital.	7032	2362	251	26	2085	878	599	857	28	
German Hospital.	2641	2444	3	1331	1110	946	1130	343	25	
British Mission to the Jews Disp.	2936	1008	57	160	791	380	263	363	2	Closed August & September.
Kupat Cholim Dispensary.	30848	13685	363	-	13322	-	-	13665	-	
Soeurs de Charité Dispensary.	15310	3466	915	704	1647	2211	1186	69	-	
NABLUS.										
Church Missionary Society Hospital.	11665	3366	159	-	3227	-	-	-	-	

VOLUNTARY DISPENSARIES & CLINICS - 1925 (Continued).

Name of Dispensary or Clinic.	Total attendances.	Number of new Patients.									Remarks.
		Totals	By Diseases.			By Religions.					
			Malaria.	Eye Diseases	Other Diseases	Moslems.	Christians.	Jews.	Other Religions		
NAZARETH.											
Edinburgh Medical Mission Hospital.	4784	2909	139	583	2187	1591	1317	1	-		
French Hospital.	4099	2820	106	336	2378	1561	1256	1	-		Closed.
TIBERIAS.											
Scottish Mission Hospital.	12608	2103	56	157	1890	-	-	-	-		
Hadassah Dispensary.	90268	13244	457	2945	9842	1295	188	11761	-		
Kupat Cholim Dispensary.	4458	1539	71	101	1367	-	1	1538	-		
SAFAD.											
Hadassah Hospital.	35825	3082	18	514	2550	424	59	2599	-		
BEISAN.											
Hadassah Dispensary.	2134	1057	76	284	697	632	235	190	-		Closed in Apr.
AIN HAROD.											
Hadassah Dispensary.	5821	1900	139	115	1646	133	2	1765	-		
TOTALS.	959624	279664	5796	63444	210424	47747	25648	193494	129		

(c) Maternity and Child Welfare.

It is satisfactory to be able to record that progress has been made in the scheme for extending the scope and number of the Government maternity and infant welfare centres and in the course of the next few years considerable development of this work is to be expected.

Meanwhile the work of the Princess Mary Maternity Wards in Jerusalem and of the Midwives Training School associated with them is continuing to increase. The number of children born in these wards during the last four years has been as follows:-

1922	1923	1924	1925
55	111	170	196

and the number of women trained as midwives has been:

1922	1923	1924	1925
3	11	9	15

Of the 15 midwives trained during the past year, 6 were Moslem women whose training was arranged under the auspices of the Midwives Training Committee appointed by the Moslem Supreme Council.

In addition to the women trained in the Government School, 4 nurses of the Hadassah Medical Organization completed the course and examination of that organization and were granted licences to practise midwifery, while 38 midwives with foreign qualifications were licensed.

The number of Infant Welfare Centres throughout the country has increased. Those of the Hadassah Medical Organization were the largest and most numerous. In 1922 the Hadassah opened one centre with one nurse in Jerusalem. In 1925, they had 5 centres in Jerusalem, and centres in one or two other towns and a number of the Jewish Colonies. The figures for their Jerusalem centres are as follows:-

	No.of Babies Registered.	Visits to Centre.	Home visits by Nurses.
1922.	486	4824	2743
1923.	589	8062	7497
1924.	781	13828	9853
1925.	926	22292	10261

To stimulate the opening of Infant Welfare Centres in some of the smaller towns, the Department offered to allow its Medical Officers to supervise the work and act as consulting medical officers, to permit the centres to be conducted in the Government Dispensaries and to supply the necessary simple drugs and dressings. An Infant Welfare Committee was accordingly formed in Ramallah by the American Society of Friends and a centre opened there in June while at the end of the year a nurse was under training for a proposed centre in Nablus and a Committee had been formed to open a centre in Jerusalem.

Two valuable infant welfare centres were at work in Tel Aviv conducted by the Woman's International Zionist Organization as branches of the New Zealand Plunket Society. That at Nordia cared for 449 infants; there were 5199 attendances at the centre and 1160 home visits were made by the nurses. The other centre at Neve Shalom cared for 653 infants and there were 6039 attendances and 1581 home visits.

At Haifa a similar centre also conducted under the auspices of the New Zealand Plunket Society was of great service, and a movement was started there among the non-Jewish Section of the community to undertake infant welfare work.

(f) Ophthalmic Service.

The Government Ophthalmic Clinics at Gaza, Ramleh, Nablus, Tulkarem, Beersheba and Acre became firmly established during the year and carried out valuable and skilled treatment thanks to the assistance given by the British Order of St. John of Jerusalem.

The preventive ophthalmic work carried out by the school Medical Officers is described in Section III (h).

The following extract from the report of the Warden of the Ophthalmic Hospital of the Order of St. John in Jerusalem describes in some detail the work of the six ophthalmic clinics:

" Last year I reported as follows: "1924 saw the inauguration of the scheme whereby the Order agreed to assist the Government of Palestine firstly by the supervision of the Ophthalmic Clinics at various centres throughout the country, secondly by the training of Government Medical Officers in the essentials of ophthalmology, and lastly by the training and maintenance of six Government nurses at the Hospital of the Order in Jerusalem, thereafter to continue in the service of the Order and be posted for ophthalmic duty to six selected centres". This scheme has therefore been in operation throughout 1925. Since the inception of the scheme nine Government Medical Officers have received training, and two of them who took the course in 1924, returned last year for a "refresher". The first course is for a period of six weeks, and the annual course thereafter of not less than three weeks. The training in the essentials of ophthalmology is severely practical. In operative work they perform at least fifty trichiasis operations under supervision, and most of the minor operations. They are trained to assist at intra-ocular operations, to carry out and record their results of the routine examination of the eye. They are given a working acquaintance with the prescribing of spectacles (with special reference to the type of case to refer to the visiting Surgeon) and the more obvious conditions demonstrable with the ophthalmoscope. Daily they receive practical instruction in the management of a clinic and the application of treatment. In the devising of this curriculum, especially in the recognition of the imperative need of standardising operative procedures and methods of treatment, I am indebted to the monumental work of MacCallan in Egypt.

With regard to the nurses, it must be understood that they are all fully trained and in possession of the Certificate of the Health Department of the Government of Palestine, whose standard of efficiency is commendably high. On joining the service of the Order they are incorporated into the routine work of the Hospital. Their course is of four months' duration, two months in the out-Patient and two months in the In-Patient Department. The work they do under supervision during training is precisely like the work required of them when posted to a centre. They are also obliged to return annually for a further course of one month. They are entitled to a certificate on the completion of one year's approved service.

Already five nurses have joined the service of the Order under this scheme. Four have completed their special training and are now at work in their centres. The fifth is still under training. The sixth is expected to join our service early in 1926.

In addition to the above two Government nurses were posted for training. These women remain in the service of the Department of Health and are posted to centres, supervised but not staffed by the Order.

The Medical Officers at the Ophthalmic Centres forward weekly and monthly returns, which keep us informed of the work done, nature of cases seen , number and nature of operations etc. In addition they fill up and return a special "Intra-Ocular Card", which as the name suggests contains particulars of any case of Cataract, Glaucoma, etc., which may seek their advice. On receipt of this card appropriate action is taken, e.g. the Medical Officer may be requested to send the case for admission to the Hospital in Jerusalem or asked to refer the case to the Surgeon at his next visit, or receive instructions as to treatment or otherwise. These cards are filled at the Hospital of the Order.

Nurses of the Order have been posted to the Clinics at Gaza, Ramleh, Nablus and Acre. These centres with the addition of those at Beersheba and Tulkarem have been visited with some regularity. The centres at Jaffa and Haifa have been visited on occasion.

Space does not permit of a detailed record of the work done at these centres, but the statistics are as follows: At the six centres under regular visitation, New Cases 9,679; Total Consultations 62,256; Admitted (i.e. to the local Government Hospital) 152; Operations (mainly Trichiasis cases) 1,710. The total at the remaining centres are: New cases 1,354; Total Consultations 7,672; Admitted 32; Operations 77.

In addition to the foregoing the Nurses of the Order (under the supervision of the School Medical Officers) hold daily clinics for the examination and treatment of school children. The results of this work are especially encouraging.

There remains no doubt as to the need for and the utility of such a scheme. The one drawback is implied in the statement that there is always more work at the Hospital in Jerusalem than the present staff can accomplish. Hence when a Surgeon goes on tour the amount of work done at the central Hospital is proportionately diminished. On the other hand whilst on tour he conducts clinics, operates, instructs, etc., at the centres. But if the maximum benefit to Palestine is to be derived from this scheme, it is advisable that the clinics be more frequently visited. It must be remembered that the Government doctors have many duties to perform and that ophthalmic work can receive only a share of their time and attention. These doctors expect and deserve encouragement and support in their work and this can be given them most readily by the stimulus of frequent visitation."

(g) Lunacy.

A need for additional accommodation in the Government Mental Hospital at Bethlehem has been felt and many insane persons have had to be detained in police lock-ups and other unsuitable places while awaiting admission to the Hospital. Plans for extension of the building are under preparation.

There has been a satisfactory development of the outdoor occupations for the patients who have been employed in gardening, vegetable growing, poultry and rabbit-keeping, carpentry and building, and who spend practically the whole day in the hospital grounds except during the four winter months.

The accommodation in the Jewish "Ezrath Nashim" Asylum has also been very fully taxed.

The classification of patients treated in the two institutions is as follows:-

	Government Mental Hospital.	Ezrath Nashim Asylum.
Mania.	7	6
Melancholia.	3	10
Delusional Insanity, Paranoid.	3	5
General Paralysis.	2	1
Dementia.	-	3
Idiocy and Imbecility.	5	5
Puerperal Insanity.	1	1
Epileptic Insanity.	-	-
Alcoholic and Drug Insanity.	2	-
Dementia Praecox.	11	24
Insanity after Encephalitis Lethargica.	1	-
Other forms of Insanity.	4	-
	39	57

ospital.	Bed Strength.	Admissions.				Deaths	Discharges.	Daily Average in Hospital.
		Moslems	Christians.	Jews	Total			
vernment ental ospital.	50	12	14	13	39	3	41	43
rath ashim sylum.	60	-	-	57	57	9	43	64

(h) School Medical Service.

The following table, compiled from figures supplied by the Department of Education, shows a total of 64,764 children attending school. For the year 1924 the figure was 58,074.

	No. of Schools.	No. of Boys.	No. of Girls.	No. of Teachers.
Government Schools in towns.	49	5139	3007	345
Government Schools in villages.	266	11008	727	342
Non-Government Schools.	489	24771	20112	
Totals.	804	40918	23846	

During the year a procedure was introduced whereby no new school might be opened without permission from the Department of Education. This permission is not given until the proposed school buildings have been inspected by the M.O.H. and conditions of hygiene laid down and complied with particularly as regards class accommodation, ventilation and lighting, drinking water supply, latrine installations and drainage. This procedure is proving of the utmost value in raising the standard of the sanitation and hygiene of school buildings.

In the villages a number of government schools were built more or less in accordance with the Government standard plan for a village school and they are a great improvement on the older village schools.

Much still requires to be done to improve the sanitary arrangements in most of the schools - both government and private - and overcrowding still remains the most general defect of hygiene.

The health of the children in nearly every school in Palestine was cared for either by the Department of Health or by voluntary organizations of which the Hadassah carried out the medical inspection and treatment of more than 20,000 children in the Jewish schools.

The following is a summary of the work done by the Government Medical Officers and nurses.

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	Town Schools.	Village Schools.	Total.
ectures to Teachers.			
o. of Hygiene Lectures by M.Os to teachers.	35	136	171
o. of teachers attending Lectures.	342	275	617
edical Inspection of Pupils.			
o. of children medically examined.	5024	7433	12457
" " " with trachoma.	2859	5771	8630
" " " with other eye diseases	519	63	582
" " " " defective vision.	212	478	690
" " " " verminous head or body.	249	473	722
" " " " 4 or more teeth badly decayed.	98	68	166
" " " " enlarged spleen.	193	428	621
" " " " heart disease.	14	21	35
" " " " lung affections.	37	11	48
" " " " tuberculous disease	34	2	36
" " " mentally defective.	2	7	9
" " vaccinations performed.	1595	812	2407
" " children treated for malaria.	316	551	867
hthalmic Treatment.			
. of attendances for treatment for trachoma.	527,691	523,102	1,050,793

The ophthalmic treatment given in the schools is of special importance as 69% of the children suffer from trachoma. In the town schools the "droppings" and "touchings" are done daily by the school nurse or medical orderly. In the village schools the teachers are instructed to instil the necessary drops into the eyes of the children under treatment. For each child there is an ophthalmic card on which record of treatment and progress is kept by the Medical Officer. The school teachers give much help in the eye work particularly as regards the keeping of records and rendering of returns. Without their willing assistance such work would be very difficult in the town schools and would be impossible in the villages.

(i) Railway Medical Service.

The number of persons employed on the Palestine Railways and Sinai Military Railways amounted to about 3685.

During the year there were 268 admissions to hospital and 11,361 dispensary attendances as compared with 256 admissions and 10,029 attendances the previous year.

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A course of training in First Aid was held at Haifa and 18 railway employees succeeded in passing the examination for the certificate of the St. John Ambulance Association.

The First Aid equipment at stations and on passenger and mixed trains was replenished as necessary and carefully supervised by the Medical Officers of the Department of Health and the Railway Medical Orderlies. Emergency equipment for an accident coach on the narrow gauge line was provided and the equipment of the broad gauge ambulance coach was revised and brought up to establishment.

Sanitary supervision of station premises and of passenger trains was maintained by the Senior Medical Officer, Haifa and by the Railway Medical Orderlies.

At Kantara, the small Railway Casualty Post and Dispensary continued to be conducted by the Railway Medical Officer stationed there, who also controlled the purity of the water from the mechanical filter plant and arranged the periodic bacteriological examination of the supply.

(j) Gendarmerie Medical Service.

The health of both sections of the gendarmerie has again been satisfactory.

The daily hospital admission rate for the British Section was the same as last year, viz: 0.13%, while the daily sick parade rate was 1.00% as compared with 1.17% in 1924.

The number of cases of venereal disease dropped from 16 to 10 but there was a slight increase, from 7 to 11, in malaria cases.

The Palestine Section had a daily hospital admission rate of 0.13% as compared with 0.17% in 1924 and a sick parade rate of 1.07% as compared with 1.05% in 1924.

The number of cases of venereal disease fell from 9 to 3 and of malaria from 56 to 36.

In July mobile columns were formed from both sections of the gendarmerie on account of the possibility of trouble on the Transjordan frontier. The necessary medical arrangements were made by the P.M.O. Palestine Command as the columns were intended to work in cooperation with the Royal Air Force. The mobile columns were disbanded later in the year.

In November, the trouble in Syria caused unrest on the N.E. frontier of Palestine and the Palestinian Section of the Gendarmerie, less two squadrons, were concentrated in that area. The force was placed under the Air Officer Commanding and medical arrangements were made by the P.M.O. Palestine Command. Although no battle casualties occurred among the gendarmes a large number of severely wounded Syrian Druzes who had crossed the frontier were collected and evacuated by means of camel transport, motor ambulance and train down the long lines of communication to the Government Hospital at Haifa and the Municipal Hospitals at Nablus and Acre.

GENDARMERIE MEDICAL SERVICE - 1925.

BRITISH GENDARMERIE.

Month.	Approx. Strength.	Admitted to Hospital.	Daily %	Attending for treatment.	Daily %	Cases of Malaria.	Cases of V.D.
January.	526	11	.07	134	.82	-	2
February.	518	10	.07	109	.75	-	-
March.	510	16	.10	136	.86	2	-
April.	490	10	.06	92	.62	-	-
May.	471	9	.06	137	.94	1	-
June.	438	12	.17	148	1.13	-	-
July.	410	31	.24	184	1.45	2	-
August.	412	23	.18	149	1.17	1	3
September.	429	30	.23	141	1.09	3	2
October.	445	22	.16	168	1.22	2	2
November.	434	27	.23	161	1.24	-	1
December.	414	14	.11	119	.93	-	-
TOTALS.		215	.13	1678	1.00	11	10

PALESTINE GENDARMERIE.

Month.	Approx. Strength.	Admitted to Hospital.	Daily %	Attending for treatment.	Daily %	Cases of Malaria.	Cases of V.D.
January.	483	26	.17	96	.64	4	-
February.	485	15	.11	143	1.05	2	-
March.	483	15	.10	143	.96	1	-
April.	491	18	.12	209	1.42	3	-
May.	486	12	.08	134	.89	1	1
June.	484	27	.18	209	1.44	2	1
July.	470	20	.14	180	1.23	2	-
August.	469	26	.13	163	1.12	6	-
September.	487	20	.14	201	1.31	2	-
October.	482	21	.14	127	.85	3	-
vember.	490	23	.16	145	.99	4	1
December.	488	21	.14	136	.90	6	-
TOTALS.		224	.13	1886	1.07	36	3

(k) Prison Medical Service.

The prisons of Palestine consist of two Central Prisons, at Acre and Jerusalem, containing usually about 730 prisoners, two Jail Labour Camps with 450 prisoners and a number of small lock-ups for short term prisoners and persons awaiting trial. In addition there is in Jerusalem a Howard Home containing about 25 juvenile prisoners.

During the year Regulations under the Prisons Ordinance 1921 were published which consolidated the procedure with regard to the medical care of prisoners and the hygiene and sanitation of the prisons.

Structural alterations to increase ventilation and lessen overcrowding have been carried out to some extent in the Central Prisons and in a number of the lock-ups.

There was a general improvement in the health of prisoners in the Jerusalem Central Prison which resulted in a decrease as compared with the previous year, of nearly 50% in the number of dispensary cases. The improvement is attributed to the better clothing and bedding provided for the prisoners, to the greater amount of and more systematic open air exercise given to them and to the better quality of their food and a greater variety in its cooking.

The diet for the majority of prisoners is Scale II which is as follows:-

Bread.	780 grms.	Rice.	32 grms
Olive Oil.	25 "	Onions.	13 "
Meat (Boneless).	32 "	Vegetables or fruit.	100 "
Lentils.	75 "		
Beans.	75 "	Salt.	13 "
		Ducca.	4 "

Prisoners on hard labour receive Scale III, as follows:-

Bread.	936 grms.	Rice.	38 grms.
Olive Oil.	25 "	Onions.	13 "
Meat.	118 "		
Lentils.	57 "	Vegetables or fruit.	100 "
Beans.	75 "	Salt.	13 "
		Ducca.	4 "

Except for a high incidence of malaria in one of the Jail Labour Camps, the Health of prisoners in these camps was satisfactory.

From the Howard Home only 2 boys were admitted to hospital and 10 attended for dispensary treatment, during the year. Special attention has been given to the dietary of the Home. The age of the boys varied from 11 to 18 years and regular height and weights records were maintained. In October the average weight of the boys was 3½ kilogrammes above the standard weights for boys of the same ages.

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The dietary consisted of the following:-

Breakfast: All days.	Bread	250	grams.
	Dibs (Treacle)	63	"
	or cheese	47	"
	or tea one cup		
	Fruits one orange, or 90 grams of mishmish or grapes. When fresh fruits are not available, 60 grams of dates or figs should be issued in lieu.		
Dinner (4 times a week).	Bread.	250	grams.
	Lentils.	63	"
	Beans.	60	"
	Olive Oil.	22	"
	Onions.	16	"
	Salt.	13	"
Dinner (3 times a week).	Bread.	250	"
	Vegetables.	312	"
	Beans.	60	"
	Meat.	140	"
	Semneh (cooking butter).	25	" "
	Onions.	16	"
	Salt.	13	"
Supper (4 times a week).	Bread.	250	"
	Rice of crushed lentils.	63	"
	Vegetables.	32	"
	Olive Oil.	25	"
	Onions.	16	"
	Salt.	13	"
Supper (3 times a week).	Bread.	250	"
	Cheese.	32	"
	Dry figs or Kamardine.	94	"

If treacle is not obtainable, jam or honey may be issued. Young offenders out of health may be given extra or special diet on the recommendation of the Medical Officer.

Tuberculosis has again been the most serious disease of the Central Prisons. Of 53 cases treated in the Tuberculosis Isolation Section of the Acre Prison, 19 died and 5 were released from prison as they were unlikely to recover. The disease is not contracted in the Jail Labour Companies since the prisoners in these companies work in the open air and live in tents or huts; nor does it occur in the lock-ups where only prisoners serving sentences of less than a month are kept. It is a disease of the Central Prisons of Jerusalem and Acre and the majority of cases first show signs of tuberculosis between the 6th and 24th months of imprisonment. Of the 53 cases only 4 had signs of disease on admission to prison and only 5 developed signs within the first six months of imprisonment.

(l) Training in "First Aid".

During the year 20 Railway employees were given the St.John Ambulance Association's course of instruction in First Aid and 18 were successful in passing the examination for the Certificate of the Association.

(m) The Medical Commission.

The time of the District Medical Boards has been very largely taken up with the examination of recruits for the Police and Gendarmerie. 45% of the recruits were rejected as physically unfit for service, as compared with 41% in 1924, 37% in 1923 and 33% in 1922. The most frequent causes of rejection were non-attainment of height and chest measurements and defective vision.

(n) Medico-Legal Examinations.

There has been a useful decrease in the number of medico-legal examinations carried out by Government Medical Officers at the request of the police.

9234 examinations were made in 1923 and 8202 in 1924, while in 1925 there were only 5450. This number is still unnecessarily large but the decrease indicates that the police are exercising more discrimination in the cases they send for medical examination and are not demanding medico-legal reports on cases of trivial injury.

Government Medical Officers gave evidence in the Courts on 299 occasions and performed 152 post mortem examinations for medico-legal purposes.

(o) The Practice of Medicine, Pharmacy, Dentistry & Midwifery.

During the year the number of doctors increased from 481 to 587, pharmacists from 140 to 168, dentists from 126 to 171 and midwives from 126 to 183. Three doctors of Tel Aviv were charged before the Courts with criminally procuring abortion. Irregular practices of this kind are the direct outcome of the overcrowding in certain towns of the medical profession whose members find it impossible to earn a living by the legitimate exercise of their calling.

The Ottoman law allows no unqualified practice in any of the professions; it is much stricter than English law as regards medicine and pharmacy, and equally strict as regards dentistry and midwifery.

The Central European countries from which the majority of the immigrants come, usually divide persons practising dentistry, pharmacy and midwifery into two grades. Thus, the dental surgeon (zahnarzt), Pharmacist (provisor) and Midwife Grade I are fully qualified, while the Technical Dentist, Aide-pharmacien and Midwife Grade II, receive State recognition in their own countries and are allowed to practise their callings under certain restrictions and limitations. But on arrival in Palestine the Aide-pharmacien and Technical Dentist find they have no recognised status at all. The former can act merely as a dental mechanic carrying out certain mechanical work for qualified dentists but he cannot see or treat patients on his own account. These semi-qualified persons feel. therefore that they suffer a definite hardship and work under a considerable disability in Palestine, but there can be no question that the strictness of the Ottoman Law and the Palestine Ordinances founded on it, is generally for the public good and it is not intended to modify the existing laws.

57 midwives were licensed to practise their profession. 38 of them had been trained abroad and 19 in Palestine.

Towards the end of the year unqualified persons practising midwifery were instructed to register their names in the District Health Offices or to cease practising. Those who registered were granted a certificate of registration which is renewable annually. Of the 1277 persons who registered, 1099 were practising in the villages and 228 in the towns.

Only 50 of the 1277 women were less than 40 years of age and only 5 were able to read and write. In the villages it is not possible at present to attempt to stop the practice of midwifery by unqualified persons but in the towns no more unqualified women will be registered and those at present in practice will gradually be replaced by licensed midwives. In Jenin this has already happened and in certain other towns the number of unqualified midwives has been reduced.

LICENSES GRANTED TO DOCTORS, PHARMACISTS, DENTISTS AND MIDWIVES - 1925.

			Nationality.																												
			Sex.	Algerian.	American.	Armenian.	Austrian.	British.	Bulgarian.	Chinese.	Czecho-Slovak.	Egyptian.	French.	German.	Greek.	Hungarian.	Italian.	Latvian.	Lettish.	Lithuanian.	Palestinian.	Persian.	Polish.	Roumanian.	Russian.	Swedish.	Swiss.	Syrian.	Turkish.	Ukrainian.	Withdrawn.	TOTALS.	GRAND TOTALS.
Medicine	Licences granted.	Prior to 1925.	M	1	13	12	14	39	-	-	6	2	5	20	8	1	4	2	-	5	106	3	16	5	55	2	1	51	21	1	130	394	
			F	-	1	-	-	4	-	-	1	-	-	2	-	-	-	-	-	-	12	-	5	-	24	-	-	-	-	-	30	49	
		During 1925.	M	-	3	2	6	1	3	-	-	-	1	13	-	-	1	-	1	4	12	-	20	3	23	-	-	3	-	1	23	97	
			F	-	-	-	1	1	1	-	1	-	-	2	-	1	-	-	1	1	2	-	7	1	25	-	-	-	-	3	18	47	587
Pharmacy	Licences granted.	Prior to 1925.	M	-	4	10	4	-	-	-	-	1	1	5	4	-	-	1	-	-	45	-	1	1	15	-	1	22	4	-	39	119	
			F	-	1	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	2	-	3	-	5	-	-	-	-	-	3	13	
		During 1925.	M	-	1	3	-	-	1	-	-	-	-	-	-	-	-	-	1	-	6	-	5	-	7	-	-	3	-	2	8	29	
			F	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	2	-	-	-	2	-	-	-	-	1	2	7	168
Dentistry	Licences granted.	Prior to 1925	M	-	4	2	-	-	-	-	-	-	-	1	-	-	-	1	-	1	11	-	5	1	15	-	1	3	1	-	19	46	
			F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	20	-	10	3	27	-	-	-	-	-	53	61	
		During 1925	M	-	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	3	-	-	-	3	-	-	-	-	-	6	9	
			F	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	3	6	-	17	2	23	-	-	-	-	3	12	55	171
Midwifery	Licences granted.	Prior to 1925.	F	-	3	2	4	8	-	-	1	2	1	9	1	1	-	1	-	-	42	-	7	-	25	-	1	8	8	1	14	125	
		During 1925.	F	-	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	5	17	-	13	1	9	1	-	2	-	3	-	58	183

(p) International Opium Convention.

On 15th July 1925, the Dangerous Drugs Ordinance 1925, came into force. It provides for the "control of the cultivation, importation, exportation and possession of certain dangerous drugs......"

Regulations under the Ordinance were in course of preparation and will bring local legislation into conformity with the Geneva Convention Protocol of 1925.

The "Import Certificates" system has continued in force and has been found simple and fairly satisfactory. The certificates are issued only to licensed pharmacists in charge of pharmacies and, in certain cases, to the medical superintendents of charitable hospitals and dispensaries.

During the year, 112 Import Certificates were issued, the exporting countries being Germany; France, England, Belgium and Italy.

The imports of dangerous drugs were as follows:-

Medicinal Opium.	14,672	grammes.
Morphine.	1,015	"
Heroin.	167	"
Cocaine.	3,657	"
Codeine.	8,450	"
Pantopon.	254	"
Dionin.	1,225	"
Extract of Cannabis Indica.	355	"

Hashish and raw and prepared opium were prohibited imports and are not cultivated in Palestine and very few cases of drug addiction came to notice.

IV. SANITARY ADMINISTRATION.

(a) Water Supplies.

Since the winter of 1920-21, the rainfall each year has been below the average. For Jerusalem the average annual rainfall is 26.64 inches but for 1921-22 it was 26.2", for 1922-23, 19.95", for 1923-24, 21.5" and for 1924-25 only 12.13". As a consequence of these successive years of low rainfall the yield of the Arrub springs which are the main supply of Jerusalem, was very much below the average in the early spring and as the summer approached, became merely a trickle. The rainwater cisterns in the city contained much less water than usual so that the failure of the town supplies was foreseen and temporary measures of relief arranged in advance. As early as February, every endeavour was made by the Municipal Water Supply Department to exercise the strictest economy in water distribution; in May the Urtas spring was connected to Solomon's Pools; in June the sale of tickets for water from the street standpipes at the rate of P.T.½ per 4 gallons had to be resorted to; in July a water train bringing 30,000 gallons of water a day from the bores near Lydda was run and by September there were four such trains running daily. Two inches of rain fell in November and relieved the situation to some extent but even at the end of the year the water trains had not been entirely discontinued. The Municipality was unable to meet the financial burden of these extraordinary measures and received considerable assistance from the Government.

The population of Jerusalem has increased by some 20% since the time of the Occupation and, with the advance in the standards of life, the demand for water has increased in a very much greater proportion. Schemes for permanently increasing the Jerusalem water supply were therefore under consideration and to meet the needs of the next few years a scheme for taking the water of the 'Ain Farah - a spring with a minimum yield of 180,000 gallons per day, about 6 miles distant from but 1700 feet below the level of Jerusalem - was prepared and has since been put into effect.

At Hebron the improvement and development of existing water supplies and the provision of additional storage accommodation saved the town from water famine. Boring operations at a site selected by the Geological Adviser were carried out by the Municipaluty but at a depth of 76 metres no water had been discovered.

The Beersheba Municipality constructed and took into use a new well and the additional supply has been of much benefit to the town.

For Bethlehem and Ramallah measures for increasing the inadequate town supplies were under consideration.

The Jaffa Municipality had under consideration the preparation of a scheme for a public water supply. While there is no actual scarcity of water in Jaffa, many of the private supplies do not reach a good standard of purity and their replacement by a town supply will be of great advantage.

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The Tel Aviv Township has considerably extended its distribution system and added several new wells to the Park Badrani and Nordia pumping stations.

At Gaza the Jamakieh well was developed by the Municipality. A bore was sunk 25 metres from the old bottom of the well and a new engine was installed capable of raising 13,200 gallons per hour. At the present time 50,000 gallons a day from this well suffice to meet the needs of the town.

Haifa - which more than any other town in Palestine requires an improvement of its supply before extensive development and progress can take place - was still without even a scheme for its future water supply.

The Safad supply has been increased by tapping an additional spring and the long delayed Tiberias scheme was at last nearing completion.

The development and improvement of village water supplies have continued to receive much attention and notable progress was made in many of the villages of the Ramallah sub-district.

(b) Sanitary Engineer's Section.

Considerable time and attention have been devoted to assisting the Township of Tel Aviv in their efforts to raise the standard of domestic sanitary installations in new buildings. The interest of this section was concentrated particularly upon Tel Aviv because in that town the greatest building activity was taking place and any advances made were likely to be of value in raising standards of other towns. The Township was in favour of the system of registration of approved plumbers mentioned in last year's report, and required advice and practical assistance in organising and holding practical and theoretical examinations for candidates. 30 plumbers successfully passed the examinations held in 1925 and were registered. To specify more accurately the actual requirements of the Department on the practical side of plumbing, Plumbing Regulations were drawn up and issued under Rules made by the Central Town Planning Commission. These plumbing regulations contain the usual specifications of materials, methods of laying and jointing pipes, types of fittings, sizes of pipes etc. adopted as good practice in other countries. The translation of modern technical plumbing terms into Hebrew presented difficulties which were finally overcome by the official language committee of the Jews in Palestine in consultation with engineers.

The following is a resume of work undertaken by the section:

1. Water Supplies.

   (a) Tiberias Water Supply intake works.
   (b) Hittin Water Supply intake works.
   (c) Palestine water supply map, preliminary studies.
   (d) Haifa water supply - diagrams.
   (e) Location of birkets.
   (f) Automatic water distribution.

2. Sewerage Disposal.

(a) Nablus sewerage scheme (Preliminary).
(b) Jenin sewerage scheme "
(c) Tiberias sewerage scheme "

3. House Sanitation - Plumbing and Drainage.

(a) Village school types.
(b) Majdal Police Post.
(c) Nablus Prison.
(d) Beersheba Hospital.
(e) Gaza Hospital.
(f) Haifa Business Centre.
(g) Tiberias Hotels - Inspections and Reports.
(h) Haifa Hotels - Inspections.
(i) Model House Sanitation Plan.
(j) Plumbing and Drainage Standard Regulations.
(k) Army and Police Post sanitation types.
(l) Plumbers' Examinations - Tel Aviv.

4. Drainage - Antimalarial and Irrigation.

(a) Plans for Antimalarial Commission of League of Nations.
General Swamp plan of Palestine
and 12 swamp areas and schemes.
(b) Cherkaz Swamp improvements.
(c) Ain Maiti-Zarain swamp improvements.
(d) Cistern covers types, lender screens.
(e) Jidru and Haifa Bay Schemes.
(f) Russian Gardens - Tiberias.

5. Public Establishments.

Plans reviewed or designed.

(a) Quarantine Lazaret - Maan - Design.
(b) Quarantine Lazaret - Jaffa Additions.
(c) Disinfecting Station - Haifa - Alterations.
(d) Disinfecting Station - Jaffa Port.
(e) Fever Hospital - Haifa.
(f) Hotel Palatine - Tel Aviv.
(g) Hotel King George Road, Jerusalem.
(h) Hotel Migdal - Tiberias.

6. General.

(a) Signs, charts and diagrams for laboratory.
(b) Mental Hospital - Isolation Rooms.
(c) Central Laboratory equipment.
Calf stable operating table repair.
Vaccine refrigerator container.
(d) Medical Institution, Quarantine Station of Palestine - Map.
(e) Pharmacy funiture.
(f) R.R. map and medical control.
(g) Post mortem meat stamp slaughter house.
(h) Map of Pilgrims Routes.

(c) Municipal Sanitary Work.

The following extracts from the reports of Senior Medical Officers of Districts indicate items of interest dealt with in Municipal areas of the larger towns. The Department advises Municipal bodies upon all projects affecting Public Health and Sanitation and maintains supervision over services of major importance. The support of administrative officers in these activities is essential to ensure continuous progress. The sanitary conditions of most of the larger towns still leave much to be desired. The provision of main drainage and central water supplies becomes each year a matter of greater urgency. The influx of immigrants the greater proportion of whom finally settle in towns together with the natural increase of population has led to much overcrowding in slum areas where accommodation is bad and sanitary conveniences absent or primitive in type. The lack of small houses at a cheap rental has led to the erection of quarters composed of huts and these areas present a sanitary problem with which the Municipalities of Jaffa, Tel Aviv and Haifa have great difficulty in dealing. The existing conditions are reflected in the increase of intestinal diseases reported in all those towns.

Jerusalem.

2269 muisances were reported and 2037 were remedied. Prosecutions were undertaken on 382 occasions. The work of the scavenging service is increasing due to increase of population and extension of the residential areas by new building. A ton truck motor refuse cart was purchased during the year. The Meldrum destructor is now unable to cope with the amount of refuse collected for disposal daily. Proposals have been made for the purchase of an additional unit. One new public lavatory has been opened and another improved by fittings. 1297 cesspits were emptied. The plans of 860 new buildings were examined in regard to sanitation and drainage and inspections made during the course of construction and on completion. Similar work was done in connection with 855 applications for extension or improvement of existing buildings.

Jaffa Town.

Main Drainage.

A complete survey is now available of the entire Municipal area and the Municipality is negotiating with engineering firms to undertake the preparation of a water supply and drainage scheme. An agreement has been made with the adjacent Municipality of Tel Aviv which will enable the drainage of the two areas to be dealt with under one system.

Slaughter House.

Plans have been prepared and building commenced on a new and up to date slaughter house.

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Town Planning Ordinance.

A Sub Committee of the Local Town Planning Commission of Jaffa, Tel Aviv and Sarona is at present engaged in a study of the Model Building Bye-Laws of the Central Town Planning Commission with a view to the issue of local Bye-Laws for this Town Planning area.

Tel Aviv.

The scheme for the main drainage of Tel Aviv has been advanced and plans have been submitted to the Department of Public Works and the Department of Health for approval. Considerable advance has been made by the Township in the control of domestic sanitary installations. The system of registering, as eligible to undertake contracts in the Township, those plumbers who successfully pass written and practical examinations arranged by the Municipal Technical Department, has had the good effect of raising the standard of sanitary work.

Haifa.

The Sanitary Department of Haifa Municipality has advanced considerably in organization and efficiency.

The slaughter house has been extended and now consists of a slaughtering hall and dressing room for cattle, the same for sheep and a special meat inspection room with a condemned meat chamber. Meat inspection has been efficiently carried out with a resulting improvement in the condition and quality of animals slaughtered. Carcases are conveyed from the abattoir after inspection to the shops in the town by Municipal Meat Transport Carts of an excellent type designed by the Municipal Surveyor.

The equipment of the Cleansing Department has been improved by several additions, the more important of which are 2 all steel Refuse Tipping Wagons, 1 street sweeping machine, 2 improved cesspool emptying carts and 1 portable sewage pump and suction hose. 5,908 metres of sanitary pipe lines were laid in connection with Public Establishments, private houses and public institutions. All work was inspected before being covered in or put into use. Special reports were made upon Neve Shaanan and Mount Carmel Building Areas. The sanitary circumstances of Beit Galim suburb and the Hadassah Hospital were examined and reports thereon submitted.

Nablus.

Progress has been made with a drainage scheme for Nablus. A large number of householders have been brought to make improved connections to existing sewers. The requirements are on simple lines. A squatting type trapped latrine is connected to an iron soil pipe outside the house which is continued upwards as a ventilator. These are a distinct advance as they replace untrapped latrines with leaking soil pipes often built inside the house wall which ventilated main sewers directly into the houses. The existing sewers are of old fashioned masonry construction, square in sectien, so that very undesirable conditions exist in houses with the original type of connection.

Tiberias.

A preliminary plan has been made for the drainage of this town.

(d) Village Sanitation.

In most districts the opinion of inspecting officers is that the general cleanliness of Arab villages is improving. In particular is to be recorded the specific appointment of scavengers in many of these primitive communities. The Mukhtar is responsible to Government for the cleanliness of the village and by bringing individual offenders to the notice of inspecting officers of the Department he is able to secure their summary punishment by District Administrative Officers. For the most part the new Jewish Settlements are yet unorganised in sanitary matters and their general condition leaves much to be desired.

(e) Licensing and Control of Trades and Industries.

The proposed Ordinance was revised during the year by a Committee under the Chairmanship of the Chief Secretary. A considerable amount of information and statistical material was furnished to this Committee by the Department from the records of work carried out in past years under Municipal Bye-Laws for the regulations of Dangerous and Unhealthy Trades.

A special review was undertaken of the sanitary state of all hotels and lodging houses in the main towns of the country and new conditions laid down to effect improvements.

The extent and variety of the work carried out under this section which includes also the control of food stuffs sold to the public may be gathered from the statistics of places licensed throughout the country. The work will be considerably extended under the new Ordinance which authorises in addition to other matters already regulated, more particular control of the hygiene of workshops and factories.

NO. OF TRADES AND INDUSTRIES IN PALESTINE DURING 1925.
NO. LICENSED AT THE END OF 1925.

	Jerusalem.	Ramallah.	Bethlehem.	Hebron.	Beersheba.	Jaffa.	Tel Aviv.	Ramleh.	Gaza.	Majdal.	Haifa.	Acre.	Tulkarem.	Nablus.	Nazareth.	Tiberias.	Safad.	Beisan.	Jenin.	Totals.
Alcohol Depots.	4	-	-	-	-	3	-	-	-	-	9	-	-	6	-	-	-	-	-	22
Attars.	25	-	-	8	4	11	-	-	18	-	8	5	-	-	-	-	2	-	-	81
Basturma Factories.	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Barbers.	82	6	10	17	6	92	-	43	32	10	59	15	17	28	14	14	11	3	4	463
Bakeries, Bread Shops & Flour Stores.	117	4	4	31	5	64	48	11	17	4	56	12	5	23	14	30	19	3	6	473
Breweries.	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	4
Butchers and Tripe Shops.	122	8	19	24	6	48	80	27	23	15	48	3	15	24	22	26	22	3	4	539
Candle Factories.	-	-	-	-	-	-	2	-	17	-	-	-	-	-	-	-	-	-	-	19
Candle Stores.	8	-	1	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	11
Cheese and Butter Factories.	3	-	-	-	-	-	7	-	-	-	4	-	-	-	-	-	-	-	-	14
Cigarette and Tobacco Factories.	2	-	-	-	-	3	1	1	-	-	1	-	-	1	-	-	-	-	-	9
Cinemas.	1	-	-	-	-	4	1	-	-	-	2	1	-	-	-	1	-	-	-	10
Coffee Grinders and Spice Merchants.	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	2
Confectionery and Pastry.	46	3	-	3	2	21	5	1	14	3	10	13	3	29	-	4	14	-	-	171
Cotton Beaters.	10	-	-	4	-	-	-	-	2	-	1	-	-	6	-	-	-	-	-	23
Cow sheds.	92	-	-	3	-	1	-	87	-	-	7	-	-	-	-	9	19	-	-	218
Distilleries and wine presses.	26	1	6	-	-	7	2	-	-	-	7	-	-	-	-	-	-	-	-	49
Dyers.	6	-	-	7	3	3	8	4	19	14	3	1	-	-	1	-	14	-	-	83
Establishments for the retail sale of petroleum, Spirit, paraffin & mineral oils.	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	3
Factories for canning, curing or preserving meat or fish.	-	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	2
Factories for heating, cording, pressing or otherwise preparing wool hair or jute for trade purposes.	-	-	-	-	-	-	-	-	-	-	-	-	-	17	-	-	-	-	-	17

NO. OF TRADES AND INDUSTRIES IN PALESTINE DURING 1925.
NO. LICENSED AT THE END OF 1925.

(Continued).

	Jerusalem.	Ramallah.	Bethlehem.	Hebron.	Beersheba.	Jaffa.	Tel Aviv.	Ramleh.	Gaza.	Majdal.	Haifa.	Acre.	Tulkarem.	Nablus.	Nazareth.	Tiberius.	Safed.	Beisan.	Jenin.	TOTALS.
Fell Mongers.	3	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-	8
Fish Mongers.	14	-	-	-	-	9	7	-	1	1	6	2	-	-	2	12	1	-	-	55
Flour or corn mills.	18	3	5	4	3	10	2	5	6	3	7	1	2	7	3	2	1	6	2	90
Furriers.	-	-	-	12	1	-	-	-	10	1	-	-	-	-	-	-	-	-	-	24
Glass Factories.	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Graneries.	21	-	4	34	8	45	18	-	10	-	37	3	-	23	8	-	-	-	-	211
Greengroceries.	129	1	9	8	7	22	65	40	64	10	50	25	36	58	22	38	22	-	3	609
Groceries.	757	58	94	156	64	485	332	216	239	48	361	62	119	227	97	144	128	63	35	3705
Gut Scrapers.	3	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	5
Hawkers.	230	-	-	-	-	69	84	-	-	-	195	-	-	-	3	-	87	-	-	668
Hotels, Boarding & Lodging Houses.	58	1	-	4	1	48	92	2	2	-	57	4	2	10	7	26	10	1	2	327
Ice Cream and Lemonade Shops.	62	-	1	-	-	26	68	2	1	-	55	-	-	-	-	17	1	-	-	233
Ice Factories.	2	-	-	-	-	5	3	-	-	-	3	1	-	-	-	2	-	-	-	16
Industries with machinery.	54	-	-	-	-	13	29	-	2	-	26	1	-	-	-	1	-	-	-	126
Inns (Khans).	5	8	-	-	2	-	-	-	5	-	-	-	5	-	4	-	-	3	-	32
Kitchens.	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	7
Laundries.	8	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	11
Macaroni Factories.	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	2
Manure Depots and manufactories including depots for refuse and cesspool contents and artificial manure depots & factories.	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Matches Stores & Matches Factories.	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1
Milk Shops.	2	-	-	-	-	7	6	-	-	-	14	-	-	3	-	4	1	-	-	37

NO. OF TRADES AND INDUSTRIES IN PALESTINE DURING 1925.
NO. LICENSED AT THE END OF 1925.

(Continued).

	Jerusalem.	Ramallah.	Bethlehem.	Hebron.	Beersheba.	Jaffa.	Tel Aviv.	Ramleh.	Gaza.	Majdal.	Haifa.	Acre.	Tulkarem.	Nablus.	Nazareth.	Tiberias.	Safad.	Beisan.	Jenin.	TOTALS.
Milk Vendors.	175	-	-	-	-	99	71	-	-	-	-	-	-	-	-	-	-	-	-	345
Mineral Water Factories.	5	-	-	-	-	4	2	1	-	-	3	1	-	-	-	1	1	-	-	18
Oil Factories.	18	4	5	11	-	5	2	49	8	14	14	3	-	8	-	-	4	-	-	145
Paint manufacturies.	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1
Perfumery and Scent manufacturies.	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Pharmacies and Drug Stores.	31	2	2	2	-	20	26	3	-	-	13	3	-	8	3	2	2	-	-	117
Potteries.	4	-	-	9	-	-	-	-	32	-	2	1	-	1	-	-	-	-	-	49
Poultry Shops.	25	-	-	-	-	4	-	-	-	-	4	-	-	-	-	-	-	-	-	33
Public Baths.	12	-	-	3	-	8	2	1	2	-	5	2	-	7	-	-	1	-	-	43
Rag and second hand clothing establishments.	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1
Restaurants and Bars, Coffee Houses & Coffee Bars.	235	16	12	15	15	239	165	63	31	9	138	49	12	44	22	64	5	10	9	1153
Sausage Factories.	3	-	-	-	-	2	3	-	-	-	4	-	-	-	-	-	-	-	-	12
Seed Roasters.	4	-	-	-	-	6	-	-	-	-	-	-	-	3	-	-	-	-	-	13
Slaughter Houses.	2	-	1	1	1	-	-	-	-	-	-	-	1	1	1	-	1	-	-	9
Soap Factories.	4	-	-	-	-	14	2	3	-	-	2	-	-	28	-	-	-	-	-	53
Stables.	64	-	15	6	-	8	-	7	-	-	13	9	-	16	-	9	8	-	5	160
Tanneries & Hide Stores.	12	-	1	9	-	9	2	1	1	-	-	-	5	6	1	1	1	-	-	49
Tile and Brick Factories.	10	-	-	-	-	6	12	-	4	1	11	-	-	-	1	-	-	-	-	45
TOTALS.	2522	115	189	372	128	1432	1153	567	560	133	1259	218	222	593	225	407	376	92	70	10632

V. RELIEF.

The number of orphans for whose maintenance the Department is responsible is now 14. One boy who showed promise in school studies gained a scholarship and was admitted to the Men's Training College, Jerusalem. The cost of his support now falls upon the Education Department. The other 14 boys are accommodated and receive their education in the Syrian Orphanage Jerusalem, a German Protestant Institution. The cost of their maintenance is shared equally between the Government and the Orthodox Patriarchate.

VI. QUARANTINE.

(a) General.

The features of the year were a great increase of Jewish immigration and the absence of the annual Moslem pilgrimage to Mecca. The one added greatly to the work of the quarantine staff at ports while the other relieved district personnel of the labour incidental to anti-cholera and anti-small pox vaccination of departing pilgrims and medical supervision of those returning from the Hijaz.

The Quarantine establishments at Haifa and Jaffa have from time to time during past years been severely taxed in dealing with large parties of immigrants arriving at one time, but the continuous arrival of large shiploads during this year indicated that expansion of accommodation and installations were necessary at both ports if the inflow of immigration was not to be interfered with. The project for the completion of the Jaffa Lazaret and the addition of a modern disinfecting and bathing plant was modified in view of these altered circumstances and a provisional credit of £E.6000 granted for the work. The commencement of building was, however, not possible owing to difficulties in securing the extra land required for extension. Proposals for modification of the Disinfecting Station at Haifa to enable the handling of large parties in a systematic manner were also prepared and submitted to Government. Credits for additional equipment in Lazarets were applied for.

The disturbed political situation in the Hijaz which led to the overthrow of the Hashimite Government by Ibn Saud deterred Moslems leaving Palestine this year on pilgrimage to Mecca. This circumstance also prevented the usual visit of numbers of Indian pilgrims to Holy Places in Palestine after the ceremonies at Mecca. On this account there was no necessity to advise the establishment of a temporary quarantine station on the Hijaz Railway during the pilgrim season of this year.

This question, however, received consideration in view of the decision of the Imperial Government that the Akaba-Maan area should be administered by the Transjordan Government. The provisional plans for a quarantine station at Maan were reviewed and steps taken to ensure that facilities would be provided for the detention, and observation of pilgrims in 1926.

In accordance with agreements made with the Egyptian Government to permit Palestinian Moslems to proceed to and from the Hijaz by the Kantara-Suez route preliminary arrangements were made for the organization of the 1926 pilgrimage.

A special pilgrimage passport booklet was designed. This booklet contains passport, vouchers for railway journeys to and from Suez, medical certificates of inoculation, pages upon which outstanding fees due to Governments of other countries by the pilgrim can be recorded, records of medical surveillance, and an accounting page upon which the refunds due to the pilgrim upon his return can be readily calculated. It contains therefore all documents required by the various authorities charged with the supervision of the pilgrimage together with return tickets and should prove a great convenience.

The League of Nations Quarantine Mission visited Haifa in October and inspected the quarantine arrangements. The Director, Department of Health, explained the particular aspects of quarantine which were peculiar to Palestine on account of its geographical situation and its historical associations which made it a centre of immigration or pilgrimage.

(b) Port Quarantine Work.

There was a general increase in this work due mainly to increased immigration. 3466 vessels were visited for health inspections. None of these were the subject of particular quarantine measures.

6768 persons were detained in the lazarets. The majority of these were immigrants awaiting completion of disinfection or other formalities required under the immigration regulations.

The pressure of immigration upon Jaffa port where quarantine establishments and arrangements are less convenient for the handling of large parties was relieved from time to time by the diversion of ships carrying immigrants to Haifa Port. This procedure though the subject of complaint by the immigrants and the organizations responsible for bringing them to Palestine is inevitable at present.

(c) Medical Surveillance of Travellers.

48,494 persons disembarking at ports were the subject of medical surveillance at their destinations. 3,033 persons crossing land frontiers were also kept under surveillance.

In the spring of the year on the threat of hostilities in the Hijaz 22 Indian and 5 Afghan pilgrims made their way via Maan from the Hijaz to Palestine. They were forwarded under Government arrangements from Transjordan to Haifa where they were detained in the Quarantine Lazaret for stool examination and the usual period of quarantine. After completion of formalities they were repatriated through Egypt to India.

Later in the year some 500 Palestinians who had volunteered for service in the Hashimite forces were repatriated from the Hijaz to Maan and reached Palestine by the Hijaz Railway. They were met at Samakh and escorted to the Quarantine Lazaret at Haifa where after disinfection, stool examinations and observation for five days they were permitted to disperse to their homes.

(d) Immigrants.

33,887 immigrants were recorded by the Permit Control Section as having entered Palestine during the year.

Their classification by countries of origin is as follows:-

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British Isles.	268	Holland.	25	Germany.	1059
Canada.	24	Belgium.	66	Austria.	435
Australia.	3	Sweden.	3	Dantzig.	47
Cyprus.	23	Norway.	2	Hungary.	80
S. Africa.	27			Switzerland.	20
S. Rhodesia.	2				
Malta.	10				
India.	34				

Bulgaria.	725	Latvia.	462	Egypt.	214
Czeko-Slovakia.	160	Lithuania.	1748	Tripoli.	1
Roumania.	2171	Finland.	3	Morocco.	13
Yugo-Slavia.	34	Russia.	6536	Algeria.	2
		Ukraine.	189	Tunis.	3
		Poland.	16989		
		Esthonia.	16		

Aden.	177	Spain.	9	Armenia.	8
Iraq.	113	France.	157	Georgia.	1
Mesopotamia.	2	Italy.	114		
Yemen.	402	Greece.	424		
Abyssinia.	3				

Turkey.	802	Bokhara.	28	China.	16
Syria.	185	Persia.	96		
		Afghanistan.	11		

Argentine.	75	U. S. A.	594
Brazil.	16		
Havana.	6		
Cuba.	1		
Ecuador.	1		
Columbia.	6		

31,467 immigrants were medically examined at ports on disembarkation. 6 were referred to Permit Officers on account of medical disabilities specified under the Immigration Regulations as follows:-

Lunacy 2, Idiots & Imbeciles 2, Active Syphilis 1, Active Tuberculosis 1.

An invitation was received from the Health Section of the League of Nations to send a delegate to attend the Mediterranean Intercharge of Port Health Officers. The invitation was greatly appreciated but it was unfortunately impossible to spare an officer for the length of time embraced by the tour.

VII. LABORATORY SECTION.

1. INTRODUCTION.

The general organization of the Laboratory Service in Palestine continues as since 1923.

The present report on the Laboratory Section of the Department of Health deals exclusively with the work carried out in Jerusalem at the Central Laboratories for the performance of which the following staff is responsible:

Senior Medical Officer. in charge.	1.	Medical Officer.	1.
Government Analyst.	1.	Asst. Analyst.	1.
Senior Attendants.	2.	Junior Attendants.	3.
Clerical staff.	2.	Stable-man.	1.
Cleaners, messenger.	4.		

In addition to the performance of all routine examinations concerned with diagnostic, medico-legal, and public health laboratory work, the staff of the bacteriological sub-section has, since 1923, prepared and issued all the carbolized antirabic vaccine and the typhoid-paratyphoid and cholera protective vaccines necessary to meet the requirements of Palestine and Transjordania as well as the military personnel stationed within these countries.

The opening of a Calf Lymph Establishment in the beginning of 1925 rendered Palestine independent of outside sources of its supply of antivariolous vaccine.

Manufacture in the Central Laboratories of these various vaccines has resulted in an economy of over £E.3,500 being effected during the year.

On several occasions during the period under review attempts were made to collect from patients, convalescing from measles, serum in a quantity sufficient to protect the infant population of small towns threatened by this disease in epidemic form.

Among the factors militating against a completely successful venture have to be reckoned:- prejudice on the part of the parents; the generally miserable physical condition of the convalescent children; the unexpectedly high percentage of those sera collected being positive to the Wasserman Reaction. Some hundred doses of 5 c.c. pooled sera, however, were eventually issued at the request of several district medical officers but opinion as to the protection thereby afforded cannot yet be expressed.

Besides the routine work carried out in the chemical sub-section, certain special investigations were undertaken viz:

Examination into the quality of semni or native butter; analysis of over 50 counterfeit coins on behalf of the Criminal Investigation Department; enquiry into the reason for the presence of free Salicylic acid in so high a percentage of Aspirin consignments; determination of the stability of HCN in medicinal preparations; the effect of copper soap treatment of tentage against the diamond spot fungus.

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2. BACTERIOLOGICAL SUB-SECTION.

(a) ROUTINE DIAGNOSTIC DIVISION.

During the year bacteriological examinations numbering 17,765 were performed. The number and nature of the more important investigations together with the findings of interest may be briefly summarized as follows:-

(1) Blood films.- Out of 957 examinations made for blood parasites, P.vivax was demonstrated 54 times, P.malariae 4 times, P.falciparum 34 times, and the Sp.recurrentis 4 times.

(2) Blood examinations.- Cell enumerations, differential counts, and estimation of the haemoglobin index totalled 326, while 161 samples of blood were received for culture. Successful growth of the B.typhosus, Staphylococcus p.aureus, Streptococcus pyogenes was obtained from these cultures 13, 5, and 3 times respectively.

(3) Histological Sections.- 138 pathological specimens were submitted for section and of this number 120 were brains of biting animals suspected of rabies. Negri bodies were present in 45 cases, while diagnosis of human pathological conditions included one fibroma, one rodent ulcer, two epitheliomata and two adenomata.

(4) Serum reactions.

(a) Agglutination tests were carried out on 5825 samples of blood. Positive findings were B.typhosus 377, B.paratyphosus A. 51, B.paratyphosus B. 57, B.abortus 170, B.proteus X 19. 37. Laboratory enquiry into the incidence of contagious abortion of cattle in this country was continued and a further 542 specimens of blood were examined. Of this number 170 cases were positive, the sera agglutinating Bang's bacillus in the diagnostic dilution of 1 in 40 or over.

The results of the investigation went to show that of those examined - irrespective of their origin, local or foreign - the percentage of cattle infected with the disease was 31.2, while of 122 cattle of European origin 39 reacted strongly to the test thus giving an incidence rate of 32 per cent. Of the remaining 405 cattle purely local (Palestinian) in origin, 122 were found to be infected showing a percentage of 30. The subject is treated in detail in a publication entitled "The occurrence of Contagious Abortion of Cattle in Palestine" (Stuart G., Transactions of the Royal Society of Tropical Medicine and Hygiene. Vol XIX. No.3.1925).

(b) Diagnosis of Syphilis. The Wassermann Reaction was performed on 2670 sera of which 861 proved positive.

During the year the practice - in force since 1921 - of performing the Wassermann and Sachs.Georgi reactions in parallel series was gradually abandoned on account of the very large number of fallacies likely to be encountered in Precipitation Tests when the majority of sera to be examined come from a distance. The results of work on this subject are to be found in two publications: "Value of the Sachs-Georgi Reaction (Stuart G., Annals of Tropical Medicine, Vol.XVII No.3, 1923) and "The Sachs-Georgi Reaction" (Stuart G. and Krikorian K.S., American Journal of Syphilis Vol.X No.1 1926).

(5) Urines.- Of the 1981 specimens examined microscopically or bacteriologically, 19 showed the presence of the ova of S.haematobium, while the cultivation of those specimens taken under aseptic conditions gave satisfactory results in 8 cases: B.typhosus 1, B.paratyphosus B. 1, B.coli communis 2, B.coli communior 2, Gonococcus 2.

(6) Sputa.- The tubercle bacillus was found in 47 specimens out of the total 282 sent for examination.

(7) Faeces.- Examinations carried out on faecal specimens amounted to 482 microscopic and 1680 cultural.

Findings from microscopic examination were E.histolytica (free) 7, E.histolytica (cyst) 1, Giardia intestinalis 2, Chilomastix Mesnili 1, Trichomonas intestinalis 1; of worm ova: Ascaris lumbricoides 35, Trichuris trichiura 12, Taenia saginata 5, Ankylostoma duodenale 2.

Results from cultural examination were: B.typhosus 1, B.dysenteriae Shiga 1, B.Morgan's No.1 - 10, B.pyocyaneus 13. The relatively small number of positive findings can readily be explained by the fact that specimens are practically never submitted from cases actually suffering from diseased conditions but almost invariably from "contacts" or "suspected carriers".

(8) Pharyngeal swabs.- (including Naso-pharyngeal). The following organisms were found to be present in the 233 swabs forwarded: B.diphtheriae 26 times, B.leprae 18 times, Meningococcus twice.

(9) Urethral smears.- The gonococcus was identified in 35 out of the 240 specimens submitted.

(10) Cerebro-spinal fluid.- 40 such fluids were examined and the organisms isolated proved to be: B.typhosus 1, B.enteritidis Gaertner 1, Streptococcus pyogenes 1, Meningococcus 2. The apparently unique occurrence of "Meningitis due to B.enteritidis Gaertner" is recorded under that title in the Journal of Hygiene 1926 (Stuart G. and Krikorian K.S.).

(11) Rabies.- On behalf of the Veterinary Authorities, 182 microscopic examinations were made of brains extracted from animals believed to be rabid. In 62 cases Negri bodies were demonstrated.

The biological test was performed on 10 occasions, in each case with positive result.

LABORATORY FINDINGS IN MALARIA - 1925.

From 22,586 Examinations.

Type and Locality.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.	Yearly.
BENIGN TERTIAN MALARIA.														
Jerusalem.	10	12	9	18	14	13	13	13	21	16	13	14	166	
Jaffa.	19	9	19	18	28	34	46	32	20	13	17	25	280	
Haifa.	97	76	58	63	40	164	167	104	56	45	51	43	984	
Tiberias..	12	9	12	7	11	32	27	16	11	7	84	111	339	
Safad.	5	4	10	5	7	34	23	25	6	11	25	8	163	
Total recorded.	143	110	108	111	100	277	296	190	114	92	190	201	Total	1932
MALIGNANT TERTIAN MALARIA.														
Jerusalem.	3	0	0	0	1	1	2	6	12	15	6	13	59	
Jaffa.	5	0	0	0	1	0	12	12	11	16	32	17	106	
Haifa.	22	0	2	0	3	31	72	46	41	25	35	19	295	
Tiberias.	13	5	4	0	1	4	6	10	11	6	48	33	141	
Safad.	17	7	1	1	0	7	9	15	19	5	39	27	147	
Total recorded.	60	12	7	1	6	43	101	89	94	67	160	109	Total	749
BENIGN QUARTAN MALARIA.														
Jerusalem.	0	0	0	0	0	0	1	1	0	1	0	1	4	
Jaffa.	0	1	0	0	0	1	1	1	1	0	1	0	6	
Haifa.	7	1	0	2	0	0	0	1	1	0	0	0	12	
Tiberias.	2	5	1	1	0	1	1	0	0	0	0	1	12	
Safad.	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total recorded.	9	7	1	3	0	2	3	3	2	1	1	2	Total	34
Total Monthly Incidence. (All Forms).	212	129	116	115	106	322	400	282	210	160	351	312	Yearly	2715

TABLE II.

RECORD OF BACTERIOLOGICAL EXAMINATIONS PERFORMED DURING 1925.

ture of Specimens.	Total Examinations.		Nature and Number of Positive Findings.		
	Govt. Labs.	Other Labs.	Finding.	Govt. Labs.	Other Labs.
ood Films.	6985	15,601	P.vivax.	705	1227
			P.malaria.	16	18
			P.falciparum.	217	532
			Sp.recurrentis.	4	7
			Piroplasmosis.	1	1
ood					
a) Enumeration of cells.	129	7629			
b) Haemoglobin index.	121	9403			
c) Differential count.	166	5470			
d) Culture.	257	1452	B.typhosus.	31	179
			B.paratyphosus A.	0	8
			B.paratyphosus B.	0	18
			B.coli.	0	1
			Streptococcus.	3	1
			Staphylococcus.	6	3
stological Section.	158		Negri bodies.	72	
			Tumour formations.	18	
ter for analysis.	1851	2			
lk for analysis.	94	234			
rum reactions					
a) Agglutinations.	6600	1447	B.typhosus.	448	429
			B.paratyphosus A.	54	26
			B.paratyphosus B.	60	56
			M.melitensis.	45	0
			B.abortus (Bang).	170	26
			B.proteus X19.	37	25
b) Diagnosis of Syphilis.	2670	937	Wassermann Reaction.	861	163
c) Precipitin Reactions.	10	0	Human blood.	3	0
uta.	533	1576	Tubercle bacillus	89	253
aryngeal swabs cl.Naso-Pharyngeal.	337	1219	B.diphtheriae.	33	73
			Meningococcus.	2	0
			Vincent's Angina.	3	18
			B.leprae.	18	2
ethral Smears.	425	272	Gonococcus.	65	28

Nature of Specimens.	Total Examinations.		Nature and Number of Positive Findings.		
	Govt. Labs.	Other Labs.	Finding.	Govt. Labs.	Other Labs.
Brains for diagnosis of Rabies.					
(a) Microscopic examinations.	182	0	Negri bodies.	72	
(b) Biological tests.	10	0	Rabies.	10	0
Urines.	3177	26,017	S.haematobium.	19	26
			B.typhosus.	6	1
			B.paratyphosus B.	1	1
			B.coli communis.	2	0
			B.coli communior.	2	0
			Gonococcus.	2	
Faeces.					
(a) Microscopic examination.	1551	16,694	E.histolytica (free)	65	905
			E.histolytica (cyst)	26	355
			Giardia intestinalis.	17	78
			Trichomonas intestinalis.	44	557
			Chilomastix Mesnili.	1	0
			WORM OVA.		
			Ascaris lumbricoides.	147	1026
			Trichuris trichiura.	161	1300
			Enterobius vermicularis.	3	57
			A.duodenale.	4	4
			S.mansoni.	2	11
			T.saginata.	17	152
			T.nana.	2	83
(b) Cultural examination.	2325	1795	B.typhosus.	2	0
			B.paratyphosus A.	1	0
			B.dysenteriae Shiga.	3	3
			B.dysenteriae Flexner-Y.	26	25
			B.proteus.	0	4
			B.pyocyaneus.	13	0
			B.Morgan's No.1	10	0

Table I records the total findings of all laboratories for malaria during 1925. It is to be understood that the distribution, type, and incidence as shown is no true index of Malaria in Palestine but one important fact emerges, viz: the extraordinary low figure for the quartan form of parasite.

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The percentage figures of occurrence for P.vivax, P.malariae, and P.falciparum are 71.15, 1.25, and 27.6 respectively.

Table II is a record of the bacteriological examinations performed by the various laboratories in Palestine, viz:- The Government laboratories at Jerusalem and Haifa (the latter the laboratory of the Malaria Research Unit), and the laboratories of the Hadassah Medical Organization at Jerusalem, Jaffa, Haifa, Safad and Tiberias.

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(b) MEDICO-LEGAL DIVISION.

In 13 instances were laboratory investigations carried out at the request of the Legal Authorities for the identification of stains found on the clothing of persons suspected of murder.

Chemical (Benzidine), Microscopical (Haemin crystal production and demonstration), and Spectroscopic examinations - the preliminary tests made to establish that the stains were actually of blood or not - showed 6 to be positive and 7 negative. The source of blood was determined serologically by application of the differentiating precipitin test. Of the 6 blood stains thus examined, 3 proved to be of human origin.

In 5 cases, specimens of hair were submitted to examination so that opinion might be expressed as to the object forwarded being hair, and if hair, whether human or animal, and if human from what part of the body.

The garments in 3 cases of suspected rape were examined for the presence of seminal stains. In one case fully formed perfect spermatozoa were successfully demonstrated.

(c) PUBLIC HEALTH DIVISION.

(1) Water examination.- A complete bacteriological investigation has been carried out in respect of each sample of ordinary drinking water, aerated water, and ice submitted by the medical authorities for those districts served by the Central Laboratories.

The potability of such public water supplies as have been declared free from human pollution by sanitary survey has been estimated by bacteriological examinations made on behalf of the undermentioned towns in the following numbers: Jerusalem 465, Jaffa 126, Nablus 69, Ramallah 45, Ramleh 37, Beersheba 27, Hebron 18, Gaza 17, Majdal 16.

From Beisan, Tulkarem, Nazareth and Haifa have also been sent special samples although normally routine analysis of water on behalf of these towns is conducted by district laboratories.

Bacteriological control of the purity of the products of aerated water factories and of ice factories in Palestine has been maintained; thus for Jerusalem 284 samples of aerated waters and 41 samples of ice have been subjected to laboratory investigation.

Examination of water samples taken from private cisterns and storage tanks in Jerusalem and Jaffa has been performed 410 and 70 times respectively.

The total number of complete bacteriological examinations made on samples of drinking water, mineral waters, and ice by the Central Laboratories has been, during the year, 1645.

(2) Milk examinations.- Milk samples totalling 90 have been examined chiefly in order that the number of bacteria per cubic centimetre - perhaps the best single index of the general character of a milk - might be estimated.

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Several requests have also been received from dairy owners for the bacteriological examination of samples to determine the presence or otherwise of tuberculosis among the milch cows.

Animal inoculation with centrifugalised samples has therefore been carried out but in no case has the tubercle bacillus been demonstrated.

(3) Examination of shaving brushes.- The practice, first instituted in 1920, of submitting 5% of each consignment of shaving brushes arriving in Palestine to the Central Laboratories for bacteriological examination has been continued by the Customs Authorities.

The fullest examination is carried out in each case, irrespective of the name or trade mark of the manufacturer or of the country of origin of the brush. By this procedure is secured the detection of the B.Anthracis in the hair of those brushes which have not been suitably disinfected, and the destruction of the consignment incriminated.

(d) ANTIVARIOLOUS DIVISION. CALF LYMPH ESTABLISHMENT.

In order that Palestine might be rendered independent of outside sources as regards its supply of antivariolous vaccine, a Calf Lymph Establishment was opened as an extension of the Central Laboratories on February 16, 1925. It was realized that the greatest likelihood of success in achieving a lymph stock of high potency would result from intensive production during the colder period of the year, November to May, and experience has now shown that work performed during those seven months assures a supply of active lymph sufficient to meet the requirements, both routine and epidemic, in Palestine and Transjordania.

STAFF.- Just as in the production of anti-rabic vaccine, so in the preparation of calf lymph, the staff engaged is derived from the personnel of the bacteriological sub-section.

ISSUES.- During the year work was carried on through two periods: February 16 to May 27 and November 12 to December 31.

In all 57 calves were vaccinated with a gross lymph yield of 248,250 doses., or an average of 4355 per calf, quantities sufficient to supply not only the normal requirements of Palestine but also (against repayment) the vaccination needs of Transjordania and of the Army and Air Force stationed within these territories.

The procedure which obtains in the Calf Lymph Establishment is shown in detail in the appendix to this report.

(e) ANTIRABIC DIVISION.

The anti-rabic procedure now in force is similar to that followed since 1923. The Central Institute, part of the

Central Laboratories, and staffed entirely from the Bacteriological Sub-Section performs a double function: it manufactures and issues all the vaccine used in antirabic treatment throughout Palestine and Transjordan, while, at the same time, acting as the Jerusalem Treatment Centre, it serves to control the efficacy of the vaccine.

The original policy of decentralization has been consistently pursued with the result that now, in addition to the Central Institute at Jerusalem, there exist treatment centres at Jaffa, Haifa, Ramleh, Nablus, Tulkarem, Gaza, Tiberias, Hebron, Acre and Beersheba.

Such decentralization ensures the "greatest good of the greatest number" of persons likely to be at risk, and is only made possible by the nature of the vaccine employed, viz:- a 2 percent. suspension of the brain of a rabbit, killed with fixed virus, in a solution of one percent phenol in distilled water; to which suspension, before issue in 30 c.c. bottles, is added an equal volume of sterile normal saline solution.

Success in decentralization of treatment is dependent upon medical officers in charge of subsidiary centres being completely conversant with all matters relating to antirabic procedure. Each officer deputed to carry out this work as part of his routine duties reports at the Central Institute where he receives a full course of instruction. During this course he has to give evidence that he has familiarised himself with the various considerations governing the policy adopted, with the whole subject of rabies and its prevention, and with every detail of procedure touching on the preparation, distribution, storage and administration of the vaccine.

A publication by the medical officers of the Laboratory Section in the Annals of Tropical Medicine and Parasitology volume XIX, No.4, December, 1925 entitled "Antirabic Procedure in Palestine with special reference to Decentralization of Treatment" embodies the present policy of the Department in this respect.

Now that statistics for 1925 are available, the results of treatment with 5 c.c. of a 1% brain emulsion over 14 consecutive days may be studied. It would appear that the substitution of 5 c.c. for the previous 2 c.c. daily has been justified, although animal experiment here has not proved the necessity of such elevation of dosage.

In that the quantity of vaccine administered, however, varies widely among the different institutes wherein this method of treatment by carbolized vaccine is practised, and as each institute claims excellent results, dosage must to some extent be admittedly empirical and ideal dosage of any institute only attained by experience.

The following statistics will show why for Palestine the daily dosage of 5 c.c. of a 1% brain emulsion has superseded the original 2 c.c. and has remained standard since its adoption in May, 1924.

COMPARISON OF RESULTS FOLLOWING DIFFERENT DOSAGE.

Part 1.	Period 1923-24 Daily dosage 2 c.c.	Period 1924-25 Daily dosage 5 c.c.
Number of persons treated.	886	1647
Unnecessary treatments.	138	519
Regular and complete treatments.	748	1128
Total deaths.	9	5
Death rate.	1.2%	0.3%
"Failures".	4	0
"Failures" rate.	0.5%	0
Part 2.		
Number of persons definitely at risk:		
(a) proved by laboratory investigation.	180	158
(b) proved by veterinary officer's certificate.	48	103
Number of persons presumably at risk.	213	281
Death rate.	2%	0.9%
"Failure" rate.	0.9%	0

Table III shews in detail statistics of antirabic treatment administered to bitten persons during 1925. It will be observed that, during the period, 588 patients received regular and complete courses of treatment. The mortality rate, comprising all deaths and calculated only on patients that ran a definite risk of infection was 0.3%, while the "failure" rate was nil.

That the prophylactic or curative treatment of animals is yet on a satisfactory basis has not been the experience of the workers in this Institute. The introduction elsewhere of the single injection method in the protective vaccination of dogs has been welcomed as being at once the most practical and inexpensive, and reports issued in regard to its effectiveness have been encouraging.

Could the value of this method be accepted without question an ideal means of reducing the incidence of rabies in towns would be available in that licensing and registration of dogs could be made contingent upon compulsory vaccination. So far, however, the experiments carried out here in this respect have not fulfilled expectations, and thus it has not yet been found possible to advise inclusion of such a method of protective vaccination among the anti-rabic measures in force in Palestine.

On the other hand, satisfactory results have followed the prophylactic injection of 5 c.c. daily of the standard carbolized vaccine over a week's course. It is recognised, however, that this method, even though efficient, is, chiefly on account of the number of injections necessary, somewhat impractical for general application.

During the year, curative treatment was administered by veterinary officers to 79 animals. Of this number 57 (55 cows, 2 donkeys) came under treatment 12 days after having been bitten, 15 (all cows) 5 days after, and 7 (5 donkeys, 2 mules) 9 days after. In each instance the biting animal was a rabid dog. Of the 15 cows treated in the second series, 4 died, 32, 73, 82 and 133 days respectively after completion of treatment. In considering these results, however, two points are to be remembered: the loss of 5 days in commencing treatment, and the fact that all four animals were severely bitten about the head.

From the work done since the inception of antirabic procedure in Palestine in 1923, certain conclusions may now be drawn:

1. Carbolized antirabic vaccine as prepared and administered here is an efficient and safe treatment for persons bitten by rabid animals.
2. It can be manufactured without additional staff in any well-equipped laboratory.
3. It can be distributed to any number of treatment centres, where as good results attend its use as at the place of its production.
4. Better results have followed the employment of a dosage of 5 c.c. daily of a 1 percent. emulsion over 14 days than of 2 c.c. of the same emulsion over the same period.
5. Carbolized vaccine is most practicable in the curative and prophylactic treatment of farm animals. It can be easily administered in rural districts by veterinary officers.
6. It is a great advance on older methods of treatment in the wideness of applicability and economy of production of the vaccine. It is at once the most economical and utilitarian mode of treatment.
7. Bitten persons can be treated at or near their own homes, and thus, - the all important consideration of immediate treatment aside - they are spared the expenses connected with travel to and residence in a strange town.

TABLE III.

GOVERNMENT ANTIRABIC INSTITUTE
GENERAL STATISTICAL TABLE.

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January 1, 1925 to December 31, 1925.

No. of persons treated at the Antirabic Centre in	Jerusalem	177
" " " " "	Jaffa	364
" " " " "	Haifa	178
" " " " "	Ramleh	70
" " " " "	Tulkarem	18
" " " " "	Nablus	38
" " " " "	Gaza	10
" " " " "	Tiberias	39
" " " " "	Hebron	12
" " " " "	Acre	10
" " " " "	Beersheba	4
Total No. of persons treated in the various Government Antirabic Centres in Palestine		920
No. of interrupted or unnecessary treatments (Biting animal remaining well after a period of ten days)		329
No. of treatments carried out regularly and completely		591
Cases of Hydrophobia occurring after 15 days of the completion of treatment (Failures but irregular treatment)		1
Cases of Hydrophobia occurring during treatment or within 15 days of its completion		2
Mortality rate, comprising all deaths calculated on patients that ran a definite risk of infection		0.3%
Failure rate		Nil.

Classification according to:	Species of biting animal.	Dog	620
		Cat	169
		Jackal	31
		Wolf	0
		Fox	5
		Other animals	70
	Condition of Biting animals.	Rabid by Bacteriological & Biological tests	45
		Rabic clinically	8
		Suspected by altered behaviour	97
		Unknown (no information available)	404
		Healthy	341
	Location of bite.	Head and face	52
		Upper extremity	321
		Lower extremity	510
		Body	37
	Severity of Bite.	Severe	173
		Slight	747
	Whether bite was made through naked skin or thro' clothing.	Naked Skin	542
		Thro' Clothing	378
	Whether efficiently cauterized or not.	Efficiently cauterized	12
		Not efficiently cauterized	908

TABLE IV.

Statement of Rabies and its control in Palestine - 1925.

Centre for Treatment.	Bitten Persons.		Biting animals.																										
			Specification.										Total number of animals.	Condition.					Disposal.									
														Definitely rabid.					Killed.				Ran away.				Kept under observation.	
	No. applying for advice and aid.	No. actually treated.	Cats.	Dogs.	Foxes.	Jackals.	Horses.	Donkeys.	Cattle.	Pigs.	Rats.	Unknown.		By Laboratory investigation.	Clinically.	Suspected rabid.	Healthy.	No information available.	Rabid.	Suspected.	Healthy.	No information available.	Rabid.	Suspected.	Healthy.	No information available.	Died within 10 days.	Remained healthy.
Private Institute Jerusalem.	112	89	23	55	-	1	2	1	-	2	4	1	89	7	-	12	44	26	7	9	-	1	-	1	-	33	-	38
Govt. Institute, Jerusalem.	117	117	47	114	-	-	5	1	2	2	2	2	175	6	-	7	69	93	6	3	-	-	-	2	-	92	1	71
" " Beersheba.	4	4	-	4	-	-	-	-	-	-	-	-	4	1	-	1	-	2	1	1	-	-	-	-	-	2	-	-
" " Jaffa.	364	364	66	238	-	11	5	6	3	-	-	7	336	20	4	29	137	146	24	12	1	7	-	-	-	141	7	144
" " Ramleh.	70	70	3	51	4	8	1	-	-	-	-	1	68	1	-	12	22	33	1	5	-	7	-	7	1	26	-	21
" " Gaza.	10	10	2	6	-	-	-	1	-	-	-	-	9	-	2	4	-	3	1	5	-	-	-	-	-	3	-	-
" " Nablus.	38	38	-	21	-	2	-	1	1	-	-	-	25	3	-	3	6	13	3	1	-	1	-	2	-	12	-	6
" " Tulkarem.	18	18	-	11	-	2	-	1	-	-	-	-	14	1	-	-	5	8	1	-	-	1	-	-	-	7	-	5
" " Haifa.	178	178	17	91	-	6	4	2	1	-	4	6	131	3	2	20	44	62	6	10	-	3	-	3	2	62	1	44
" " Acre.	10	10	-	9	-	1	-	-	-	-	-	-	10	-	-	2	1	7	-	2	-	-	-	-	-	8	-	-
" " Tiberias.	39	39	11	17	1	-	1	-	-	-	-	1	31	2	-	6	13	10	2	5	-	-	-	-	-	12	-	12
" " Hebron.	12	12	-	3	-	-	-	-	-	-	-	-	3	1	-	1	-	1	1	1	-	-	-	-	-	-	-	1
Total all Palestine.	1032	1009	169	620	5	31	18	13	7	4	10	16	895	45	8	97	341	404	53	54	1	20	-	15	3	398	9	342

(f) VACCINE DIVISION.

In addition to the manufacture of antivariolous and antirabic vaccines, the production of all protective and curative vaccines required in Palestine was also undertaken.

Thus for the Department of Health, prophylactic vaccines against the enterica and cholera were prepared; for the Department of Agriculture, vaccine against the Contagious Abortion of cattle; and for private persons, autogenous vaccines against furunculosis and acne.

All vaccines are issued in glass bottles of 30 c.c. capacity. Sterilized in the autoclave and filled by gravity from a large glass funnel of the "separator" type, each bottle is invested with a rubber cap which is securely wired on and then coated with a layer of paraffin. Standardization is effected by application of the Turbidity method described in Harvey's "Bacteriological and Laboratory Technique" Section IV, Indian Journal of Medical Research Vol.9. No.3. 1922.

(1) Typhoid paratyphoid vaccine.- This is so prepared that each cubic centimetre contains of B.typhosus 1000 millions, and of B.paratyphosus A and B.paratyphosus B. 750 millions each. So far it has not been considered necessary to include in the stock vaccine B.paratyphosus C. on account of the rarity of infections with this organism in Palestine.

During 1925 there have been issued 14.370 doses - a quantity sufficient to secure protective vaccination of all immigrants and for those of the resident population whose inoculation seemed desirable for epidemiological reasons.

(2) Cholera Vaccine.- Each cubic centimetre of cholera vaccine contains 2000 million organisms.

It is prepared as a prophylactic chiefly on behalf of pilgrims proceeding to Mecca and to meet the demand 3450 doses were required.

(3) Autogenous vaccines.- These have been made chiefly for cases of furunculosis and acne. Considerable success has attended the inoculation of these vaccines of which 24 were prepared in the course of the year.

(4) Vaccines for veterinary use.- As has been already recorded, the manufacture of such quantities of antirabic vaccine as may be required in the prophylactic and curative treatment of animals has been carried out. In addition, however, to the order of the Veterinary Section of the Department of Agriculture, vaccine prepared from the B.abortus (Bang) to the amount of 3300 c.c. has been produced in an endeavour to cope with a disease, the incidence of which is considerable in Palestine: the contagious abortion of cattle.

3. CHEMICAL SUB-SECTION.

Work done.

See Table I. A total of 5512 samples has been examined as compared with 4132 last year.

In addition to the work in connection with the various activities of the Department of Health, considerable use has been made of the services of the laboratory by the Department of Customs, Excise and Trade, the Legal Department, the Department of Police & Prisons, and by the Geological Adviser. Other Government Departments, Public Bodies and private persons have submitted occasional samples.

1. Department of Health.

(a) Milk. (See Table 2.). The routine examination of milk taken from Hospitals and Street Vendors is carried out in Jerusalem and in nine other municipal areas. The number of samples totals 3990 as compared with 3103 last year, and of these 212 were the subject of prosecutions on account of added water or removal of fat (generally the former). This works out to 5.3% of the total as compared with 7.8% last year.

The mean figures for Fat and Solids-not-fat in the 3778 presumably genuine samples work out at:-

4.3% Fat.
8.5% Solids not fat.

(b) Semni (native butter).- Last year's report indicated that a considerable proportion of the Semni sold in the country is in all probability adulterated. This year steps have been taken to secure a much larger number of samples from the markets and at the ports of entry, and out of a total of 167 samples 55 have been found to be grossly adulterated.

The adulterant is generally added in such large quantities that the number of samples giving analytical data on the border line is comparatively few, and sufficient evidence can generally be obtained from the Reichert-Meissel number and the refractive index. The saponification and iodine values are also recorded in all samples. The valenta test has also been found of some value.

Control is complicated by the fact that the adulterated or "mixed" semni is a recognised commodity which commands a much lower price than the genuine semni. It is, however, as often as not sold as pure semni at considerable profit. Several successful prosecutions have been instituted in such cases.

Further data is in the course of collection.

(c) Alcohol and Alcoholic Liquors.- The denaturing regulations mentioned in last year's report have resulted in a considerable decrease in the amount of alcohol imported into the country, but it is difficult to judge the general effect upon the extensive trade in spurious liquors of local manufacture. It is established that various attempts have been made to produce a potable spirit from the denatured alcohol.

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Eight thousand litres of liquor discovered in one distillery contained mineral naphtha and a flavouring essence, the inference being that denatured alcohol had been distilled and then flavoured to imitate cognac. It appears that the local palate will tolerate mineral naphtha (kerosene) in a liquor if it is disguised by the addition of a strong flavouring substance such as Anethol.

It has been recommended to the Director of Customs, Excise and Trade that pyridine and wood naphtha be used as denaturants and that the resulting methylated spirit be sold under a poison label.

The new licensing conditions, which define the methods and materials to be used in distilleries are in process of application. It is anticipated that these in conjunction with the strict Excise control to be instituted in the near future will greatly facilitate matters.

In the meantime some headway has been made. Essences intended for the manufacture of spurious liquors are now prohibited imports, and imported liquors to be allowed entry must now be adequately labelled with the name of the manufacturer or responsible exporter, the nature of the contents and the country of origin. It is anticipated that the latter provision will check the growing trade in foreign brands, the quality of which is so indifferent that the manufacturer prefers to remain incognito.

(d) Aerated Waters and Cordials.- The 384 samples under this heading are mostly those taken from the local factories and retail establishments by the district inspectors. The chemical examination includes tests for lead and other heavy metals and saccharine. Previous to the introduction of special precautions in the factories excessive quantities of lead, derived from the pipes used, were often found. Now it is rare to find more than one part per million.

(e) Drugs and Disinfectants.- The routine examinations of the bleaching powder in use for chlorinating water supplies has demonstrated a considerable advantage in favour of the stabilised powder, there being practically no loss of chlorine during storage whereas the reverse was the case when the unstabilized powder was in use.

Out of 19 samples of various makes of Acetyl Salicylic Acid examined 18 samples contained free Salicylic Acid. Two samples of crystalline Acetyl salicylic acid out of six examined contained traces of free salicylic acid when examined by the B.P. test. (See under special investigations).

Although very large quantities of Cocaine, Hashish, and Opium are confiscated by the Police and Customs Authorities it is seldom that samples of these are received in the Laboratory for identification. Two samples of suspected cocaine proved to be acetyl salicylic acid alone in one case and in the other acetyl salicylic acid with a very slight trace of cocaine. The paper in which this latter sample was contained was stained in a way which suggested exposure to perspiration from having been carried next to the skin, and it was found that this stained portion was impregnated with cocaine. The inference was that, originally, a mixture of acetyl salicylic acid and cocaine had been in the packet but on becoming damp nearly all the cocaine had dissolved and became absorbed into the paper.

It is known that cocaine is frequently adulterated with acetyl salicylic acid, their appearances being similar.

In a mixture supposed to contain 4 minims of Hydrocyanic acid dil. in 8 oz. no hydrocyanic acid could be detected. Control tests, however, demonstrated the fact that all the hydrocyanic acid is eliminated from a mixture made up according to the prescription if kept for a week or more in a corked bottle. This led to an investigation of the aeration method as applied to the estimation of very small amounts of hydrocyanic acid and the stability of that acid in medicinal preparations.

A powder examined contained over four times the prescribed quantity of Fol.Digitalis.

2. Ores, minerals and metals.

The majority of specimens under this heading has been received from the Geological Adviser. These include mother liquors from the Dead Sea potash evaporating pans for bromine determinations, samples of Carnallite from the same source, phosphatic rocks from Transjordania and bituminous lime stones.

A tin ingot was analysed from the Palestine Railways.

3. Medico-legal specimens and Criminal Investigation.

(a) Counterfeit Coins.- Over fifty of these have been received from the C.I.D. The majority of these were tendered by passengers on the Railway.

A close examination of the coin with a lens generally indicates that it has been cast and not stamped, and a low specific gravity generally means a deficiency of silver and excess of copper. Those with a high specific gravity have been found to contain tin and lead. Some coins undoubtedly counterfeit are of normal specific gravity and contain the normal percentage of silver, while some have been received which contain an excess of silver.

The Analyst was called to give evidence in a case where materials suspected of being used in the manufacture of coins had been seized and submitted for chemical examination. The materials included the following:-
(1) graphite and clay crucibles, (2) circular iron molds
(3) ingots of metal, chiefly alloys of silver, copper and tin,
(4) a plastic substance composed of sand and a heavy mineral oil in which had been incorporated metallic mercury.

One of the pieces of metal found contained gold and the defence claimed that the accused was not making coins, but had been engaged in the time honoured pursuit of changing base metals into gold.

(b) Criminal Cutting of Trees.- This is a favourite form of spite or revenge. In one case 200 olive trees had been cut down, and certain saws found in the possession of suspected persons were sent to the laboratory for examination. Deposits of sawdust and dried sap were clinging round the teeth of the saws, and it was found that the tannin in these deposits gave reactions identical with those obtained with olive wood tannin and differing from reactions given by the tannin from all the eight other species of wood examined. These results together with those of microscopical examinations were sufficient to establish good evidence that the saws had been last used to cut olive wood.

(c) Poisoning.- Out of 18 specimens of viscera, vomit, and excretions concerned in cases of suspected human poisoning five yielded positive findings. The poisoning agent in two of these was Arsenic, one Mercury, one Caustic Soda and one was Zinc Sulphate.

Seven specimens of animal viscera have been received from Veterinary Officers. In four of these Arsenic was detected. The rest gave negative results.

Four specimens of food and drugs suspected of being concerned in cases of poisoning or attempted poisoning have been examined. In all these specimens Arsenic was detected.

4. Department of Education.

The Chemistry papers of the Matriculation Examination of the Palestine Board of Higher Studies were set and marked by the Government Analyst.

5. Department of Customs, Excise & Trade.

The work under this heading is increasing. This year the chief samples have been liquors, confectionery and building materials. It is anticipated that new Excise regulations when they are put into operation will involve a considerable amount of new work for the laboratory.

6. Inspections.

In order to obtain first hand information concerning methods of manufacture and materials used many factories and distilleries have been visited.

7. Special Investigations.

Little time has been found for work other than that connected with the examination of samples received.

An investigation is in hand in connection with free salicylic acid in "Aspirin" tablets.

The experiments are being conducted to ascertain whether other ingredients used in the manufacture of Aspirin tablets have an influence on the stability of the Aceto Salicylic Acid.

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In this connection note has been taken of the observations of Martindale and Westcott on the hydrolysis of acetosalicylic acid by dilute acid and the sensitiveness of the B.P. test for free salicylic acid.

In connection with an investigation into the stability of hydrocyanic acid in medicinal preparations an adaptation of the aeration method of determining cyanides was used (Analyst.1923.,506.)

The investigation is being continued with numerous medicinal preparations in which hydrocyanic acid is an ingredient.

There has been some further work on the Copper-Soap treatment of tentage against the diamond spot fungus mention of which was made in last year's report.

Certain tents have now been examined twelve months after treatment and it has been reported that there is no new infection on the treated tents, and that the growth of the fungus appears to have been arrested on those tents which were infected before treatment. All Department of Health tentage is now treated annually by this process.

Several other departments have made enquiries concerning the treatment.

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Table I.

Samples examined under the Chemical Sub-Section, Government central Laboratories, Jerusalem, during the year 1925.

Material.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Waters.	7	11	20	6	3	11	15	71	79	39	46	52	360
Milks.	304	320	428	372	357	364	398	326	296	252	256	317	3990
Spirits and Foods.	5	23	73	14	23	30	31	31	23	26	45	50	374
Aerated Waters and Cordials.	17	23	24	22	22	21	48	48	52	11	22	24	334
Drugs and Disinfectants.	13	16	4	3	4	10	10	11	9	9	7	15	111
Soap, Mineral oils and other commercial products.	5	5	4	1	7	3	3	3	7	1	10	1	50
Medico-Legal, poisons and Chemico-Legal.	-	2	7	10	-	30	21	2	5	46	24	9	156
Ores, Minerals and Metals.	10	-	14	1	-	9	-	-	5	3	2	2	46
Miscellaneous.	14	12	13	5	7	5	6	5	8	6	4	6	91
TOTAL.	375	412	587	434	423	483	532	497	484	393	416	476	5512

Table II.

MILK ANALYSIS IN JERUSALEM AND DISTRICTS - 1925.

District.	No. of Samples.	No. of Prosecutions.
Jerusalem:		
Hospital Supplies.	424	15
Street Vendors.	284	109
Jaffa.	1061	43
Ramleh.	254	9
Gaza.	607	-
Tulkarem.	361	-
Haifa.	338	13
Acre.	231	7
Nablus.	118	6
Tiberias.	87	10
Hebron.	225	-
TOTAL.	3990	212

Appendix.

PROCEDURE IN FORCE IN CALF LYMPH ESTABLISHMENT.

The Calf Lymph Establishment consists of a stable, attendant's quarters, and various rooms used for the inoculation and scraping of calves, for the grinding of lymph pulp, for the filling of capillary tubes, and for the performance of primary (control) vaccinations on children. The stable, operating and fodder rooms, and the attendant's quarters were specially built for this work in 1924 and comprise an annexe to the main laboratory buildings; the rooms set aside for lymph-grinding and tubing, and for the vaccination of children form part of a second annexe - the Central Antirabic Institute - also situated within the grounds of the Department of Health and at a distance of ten metres from the operating (scraping) room.

The close proximity of the main laboratories allows bacteriological investigations of the lymph emulsions to be begun without delay.

CALVES.

Mode of Supply.- During the work period November 1st. to April 30th., calves are obtained weekly, three at a time, through the agency of a contractor. After a week's strict observation at the Animal Hospital, they are, if passed fit for use by the responsible veterinary officer, transferred to the special stable at the Lymph Establishment.

Accommodation.- The calf stable, airy, cool, and well-ventilated, consists of three stalls constructed of galvanised iron bars. Outside the head of each stall are placed fodder racks and water troughs. Within each stall and at a suitable distance from its anterior end are attached swing-gates which, when closed, prevent the inoculated calf from licking the vaccinated areas, while yet allowing it complete freedom of movement in every other respect. Each stall has a concrete floor sloping down towards the main stable drain which itself is connected to an external yard gully. Each calf is provided with a wooden floor batten, made moveable to permit of easy cleansing. During the process of vesicular development, strong light is excluded from the stable by means of dark material suspended over the fly proof doors and windows.

Food.- To do away with the necessity for feeding calves on milk, the practice here has been to use only calves of from 8 to 10 months old. The daily diet required from such calves has been found to average as follows:- Tibben 1 kilo, bran 1½ kilo, Kersenneh or beans 1 kilo.

Preparation for Vaccination.- On the day following its arrival at the Lymph Establishment, each calf is placed on the operating table and an area for vaccination prepared. This area extending from the inner side of the thighs forward to the ribs is first freed from hair with a horse clippers then lathered with soap and warm water, and finally completely shaved with an ordinary razor. At no time are antiseptics of any kind applied to the area specified. The process of shaving is carried out on the day before vaccination, and on the day of vaccination itself the prepared area is again washed thoroughly with soap and warm water, sprayed with distilled water, and dried with sterile towels.

Vaccination.- During the earlier period of the Establishment's existence, the method of vaccination adopted was that of linear incisions. Along the axis of the abdomen a series of double incisions 3 to 4 inches long was made by means of a moderately sharp scalpel with the rounded back of which, previously dipped in seed vaccine, inoculation was effected. The double incisions were 1/8th inch apart with an interval of from 1/2 to 2/3 inch between each set of incisions. This method at once tedious and time-consuming to the operator and exceedingly irksome to the calf was further unsatisfactory from the point of view of lymph yield since rarely could more than 3000 doses per calf be thus obtained. The method was consequently abandoned in favour of one which has proved so uniformly successful here that it may with reason be briefly described.

Over an area of 4 inches by 4 inches are scratched parallel lines with the scalpel held sideways in the right hand, the left hand being used to put the skin on stretch. The lines 5 mm. apart extend from one margin of the area to the other. They are made of a depth sufficient only to open the skin and just not to draw blood. Such areas, numbering five to eight according to the size of the calf are then smeared over with seed lymph. Vesiculation occurs in continuous and discrete lines which do not coalesce. The yield of lymph is fairly large - an average sized calf producing 7000 to 8000 doses - while the quality of lymph is excellent, its potency-index remaining at 100 throughout the weekly controls carried out in the children's vaccination room.

LYMPH.

Collection.- Lymph is collected almost invariably five complete days after vaccination, although occasionally an optimum development occurs somewhat earlier. The vaccinated area is washed with soap and hot water, and with sterile water immediately prior to the collection of lymph, being finally dried by lightly applied towels.

Vesicular material is now removed with a Volkmann's spoon and the lymph thus collected, after being received in a wide-mouthed bottle is placed in an ice chest.

Immediately on conclusion of the "scraping" process, the abdominal wall is powdered over with talc and the calf sent to the butcher. The animal is slaughtered in the presence of a veterinary officer who, after examination of carcass and viscera, including mediastinal and mesenteric glands, certifies as to its state of health. In this country it is exceptional to find a calf other than healthy on examination. The Tuberculin test is not applied.

Preparation.- The lymph is now weighed and ground. During the grinding it is gradually diluted four times its weight with a solution of 50% glycerin in water to which 0.1% oil of cloves has been added. The diluent is carefully titrated to a reaction of pH 7 before use.

Two processes are employed to secure complete trituration of the lymph pulp: a preliminary treatment with the Broyeur Latapie (Cogit), followed by a thorough grinding in Doerr's machine. Although the resultant lymph emulsion is excellent, yet the Doerr's grinders have proved so wasteful of material and so easily deranged mechanically, that it is proposed at an early date to replace them with a type of triturating machine similar to that in use at the Government Lymph Establishment, Hendon, but fitted, in default of electric power, with treadle and driving wheel to allow of operation by foot.

Bacteriological Examination.- Specimens of the prepared lymph are now subjected to bacteriological investigation by means of aerobic and anaerobic culture tests. Several sample tubes of each batch of lymph are taken, and during the period of storage, are similarly examined from time to time thus avoiding interference with the bulk of the lymph stored.

Storage.- In February 1925, when the question of storage first arose the only means available was to keep the lymph emulsions in direct contact with ice blocks until required for tubing. As the hot weather advanced, this method proved increasingly unsatisfactory with the result that a solution to the storage problem became a matter of urgency if future lymph stocks were to retain high potency.

Lack of electric power precluded the erection of a refrigerating plant suitable for the modest requirements of such an establishment and so it became apparent that cold storage on the premises was an impossibility. The difficulties have now been overcome by application of the following simple expedients which for reasons of economy and efficiency alike can be with confidence recommended to those workers faced with similar problems.

(a) Before removal to cold storage the bottled lymph is kept in direct contact with ice blocks for a week in the well of an ordinary Smithfield Refrigerator.

(b) The lymph is now placed in the specially designed "container" at the local ice factory.

The interior of this galvanized-iron contained, 1.50 m. high and 30 c.m. square is occupied by a light metal framework fitted with handles for easy removal and divided into six compartments. Each compartment is so constructed as to accommodate the wire baskets used to receive bottles of vaccine for storage.

The container closed and made water-proof by means of an accurately-fitting sheet-iron plate lined with rubber and held in position by hinged thumbscrews, is, after having been properly counterweighted, sunk in the brine tank of a local ice factory and secured permanently by iron bands screwed to the wooden sides of the tank. The brine normally reaches to within six inches of the upper surface of the container and as the manufacture of ice is carried on throughout the year, a temperature in the surrounding brine of from - 10°C to - 3°C is guaranteed which ensures adequate cold storage. A small charge is made by the ice manufacturer for the use of that part of the brine tank occupied by the container.

Distribution.- Lymph is taken into use from cold storage in strict rotation, the oldest first, and no lymph thus removed has been stored less than six weeks. If the results of bacteriological investigation are satisfactory the lymph is filtered through gauze and tubed by means of Entrican's filling machine. Distribution is immediately effected to meet requirements and instructions accompany each issue to the effect that if not used within fourteen days the lymph must be returned to the Central Laboratories.

Results.- Each batch of lymph prior to issue is thoroughly tested as to potency. Infants numbering from 50 to 100 are brought weekly to the Establishment's Vaccination Hall where all vaccinations are performed by the laboratory medical officers. All lymph distributed throughout Palestine and Transjordania has shown in these "control vaccinations" an efficiency value of from 98% to 100%.

It must not be inferred, however, that this high success rate is universal in the rural districts; indeed, such cannot ever hope to be attained when the adverse conditions under which many of the vaccinators work while on tour are fully taken into consideration. Experiments are meanwhile being made with various types of lymph carrying boxes constructed mostly on the Thermos principle, and it is hoped that the results of these may point the way to future amelioration.

Seed Lymph.- The original supply of seed lymph was obtained in February from the Government Lymph Establishment, Hendon, but its rapid deterioration in potency after a few passages on the calf necessitated its replacement by a further quantity from the same source. Since this second consignment, regular periodic transfers on rabbits have succeeded in maintaining the potency of the seed lymph at a very high level. It is the custom here to passage the lymph through rabbits after every fourth transfer on the calf. The rabbit is vaccinated in accordance with Dr. F. Blaxall's technique, and the resultant lymph, collected on the 5th day, is used to vaccinate a calf. The lymph from this calf is divided into three batches: one batch being used immediately for the next lot of calves while the others are stored for future use. After the fourth remove from the calf, the lymph is again passed through the rabbits.

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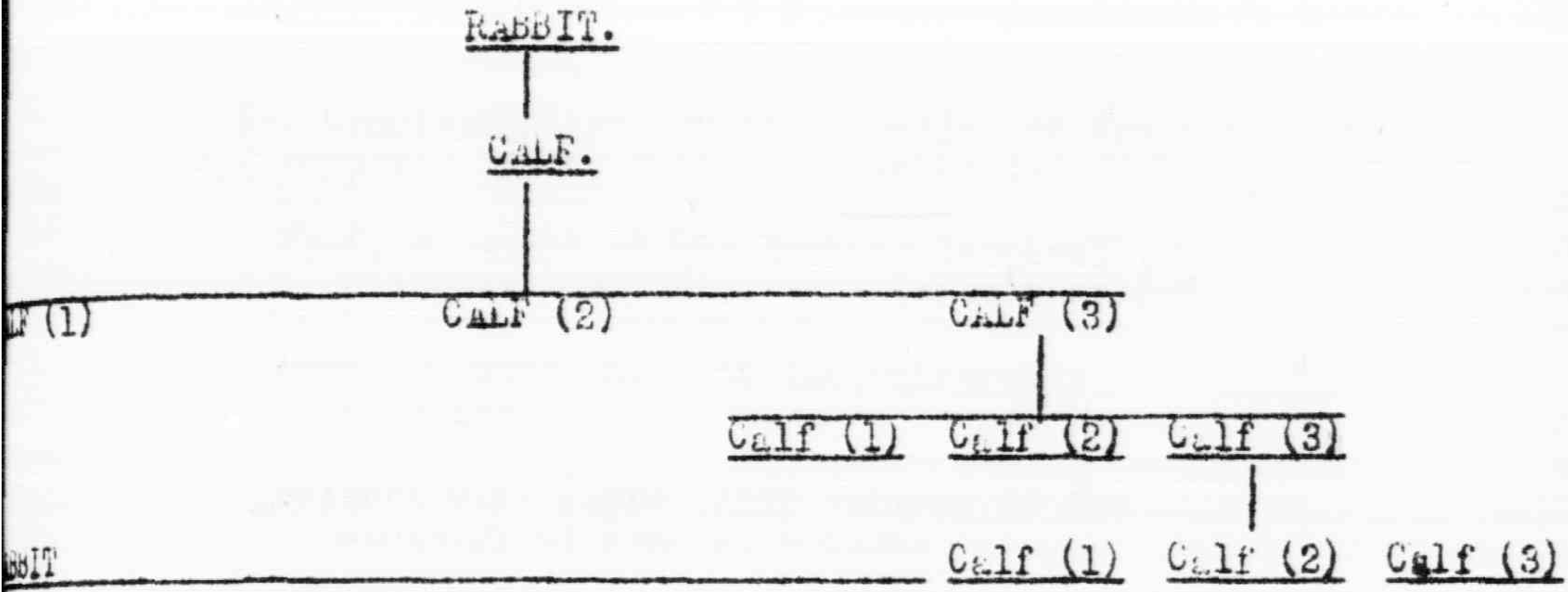
This system which has been attended with such gratifying results may be thus graphically represented.



APPENDIX.

VISIT TO PALESTINE OF THE MALARIA COMMISSION OF THE LEAGUE OF NATIONS. May, 1925.

* * *

The Commission arrived in Palestine on May 4th, 1925, and was composed of the following members:-

Prof. B. Nocht of the Hamburg Tropical Diseases Institute. (President).

Prof. D. Ottolenghi of the University of Bologna.

Colonel S.P. James (late I.M.S.) of the Ministry of Health, London.

Prof. N.H. Swellengrebel of the Tropical Hygiene Institute, Amsterdam.

Dr. S. Darling of the Rockefeller Foundation.

Dr. L. Anigstein of the Hygiene Institute, Warsaw.

Dr. Norman V. Lothian (Secretary).

Mademoiselle Besson, Stenographer.

The Committee commenced its investigations in Jerusalem on May 5th and followed the programme of demonstrations shown in the attached schedule and explanatory map.

MALARIA COMMISSION OF THE
LEAGUE OF NATIONS.

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KEY TO MAP OF
AREAS IN WHICH SWAMPS EXIST IN PALESTINE.

(Prepared by Mr. L. Cantor, Sanitary Engineer,
Department of Health).

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	Name.	Location.	Area		Remarks
			Acres.	Hectares.	
1	El Ghor.	Dead Sea.			
2	Ain Jidi.	" "	250	100	Preliminary Report
3	Ain El Feshka.	" "	10	4	" "
4	Dead Sea Post & Mouth Jordan R.	" "			
5	Jericho.	" "	200	80	Work in progress.
6	Wadi Farah.	Nablus.	900	360	Preliminary Report
7	Sanour.	"	3,000	1,200	Surveyed.
8	Jenin.	Jenin.	25	10	Work completed.
9	Beisan.	Beisan.	3,200	1,280x	Work in progress.
10	Nuris & Jezreel Valley.	"	830	332x	Work completed or in progress.
11	Balfouria.	Nazareth.	65	26x	Work completed.
12	Degania & Jordan River.	Tiberias.	350	140	Work in progress.
13	Sahl el Buttouf.	"	480	190	Surveyed.
14	Migdal.	"	625	250	Work in progress.
15	Lake Hule.	Safad.	45,000	18,000x	Surveyed.
16	Ain el Musherife.	Acre.	15	6x	Complete, neglected
17	Acre - North Area.	"	50	20x	Temporary work completed.
18	Namein River.	"	2,430	992x	Surveyed.
19	Kishon River.	Haifa.	1,410	560x	"
20	Nahalal.	"	486	194	Completed.
21	Athlit.	"	185	74x	In progress.
22	Tantura.	"	300	120	Surveyed.
23	Kabbara.	"	2,900	1,160x	Work in progress.
24	Birket Batich.	"	25	10x	" " "
25	Birket Atta.	Tulkarem.	40	16x	" " "
26	Hodera.	"	125	50	" " "
27	Ramadan.	"	1,800	720x	Surveyed.
28	Bahret Katurie.	Jaffa.	195	78	"
29	Bahret Leil.	"	450	180	"
30	Auja River Area.	"	3,000	1,200	Work in progress.
31	Nahr Rubin.	"	1,250	250x	Surveyed.
32	Wadi Surar.	"	125	50	"
33	Khulde.	"	56	22	Completed.
34	Nahr Sukreir.	"	150	100	Preliminary Report
36	Wadi el Hesa.	Gaza.			
35	Wadi el Ghuzzeh.	"			
37	Deir el Belah.	"	100	40x	Work completed.
38	Shollal.	"			

x Waterlogged areas.

SWAMP AREAS
OF
PALESTINE
MAP PREPARED
FOR THE
MALARIA COMISSION
OF THE
LEAGUE of NATIONS
MAY 1925

3-024 5.5.25

SWAMP AREAS OF PALESTINE

MAP PREPARED FOR THE MALARIA COMISSION OF THE LEAGUE of NATIONS

MAY 1925

3-084 5.5.25

23rd April, 1926.

PROGRAMME FOR THE VISIT OF THE MALARIA COMMISSION OF THE LEAGUE OF NATIONS TO PALESTINE.

May, 1925.

Date.	Time.	Area, Town or village.	Distance.	Nature of Demonstration or Remarks.	Notes on Demonstration.	Demonstrator.
Wednesday May 6.	9.15 AM.	Jerusalem.	-	Arrangements and accommodation.		
	2 PM.	"	-	Headquarters P.H.D. Organization.	1. General Organization. 2. Finance. 3. Entomological, Bacteriological and Serological Exhibits. 4. Antimalarial surveys and projects. 5. Training of Personnel.	Director of Health & Deputy Director of Health.
Thursday May 7.	8.30	"	-	Principal Medical Officer's Office.	1. Short account of disappearance of malaria in Jerusalem since institution of antimalarial measures. 2. Demonstration of routine procedure (equipment of Sanitary Sub-Inspectors, oilers, records and method of recording, Nuisance Notices, etc.).	Principal Medical Officer, Jerusalem.
	9.30	"	-	Urban Problem in Jerusalem.	Inspection tour in old city. Oiling methods and pump fitting on cisterns.	Principal Medical Officer, Jerusalem and Antimalaria Surveyor.
	10.30	"	-	Suburban problem in Jerusalem.	Inspection tour in suburban area showing mosquito proofing and pump fitting on cisterns.	" " "
Friday May 8.	8.30	Jerusalem.	40 Kms.	Depart for Dead Sea.		
	9.45	Dead Sea Post.		Dead Sea Littoral and Ain Jahiyeh.	Dead Sea Coast, spring used for irrigation of small garden. Excessive mosquito breeding from poorly managed irrigation.	Controller, Malaria Survey Section.

Date.	Time.	Area, Town or Village.	Distance.	Nature of Demonstrations or Remarks.	Notes on Demonstration.	Demonstrator.
	10.30	Ain Hajla.	45 kms.	Irrigated gardens.	Irrigation problem. Spring control in sub-tropical zone.	Controller, Malaria Survey Section.
	11	Jordan River, Epiphany Place.	50 "	Inundation of river banks.	Showing areas affected at high water.	" " "
	12	Jordan at Allenby Bridge.	63 "	" " " "	" " " " "	" " "
	1.45	Ain es Sultan	72 "	Combined Irrigation and antimalarial drainage scheme.	1. Demonstration of plans of scheme. 2. Inspection of work carried out in garden area and actual working routine of irrigation.	" " "
	3 PM.	Jerusalem.	115 "			
Saturday May 9.	7.30	Jerusalem.		Depart for Nazareth.		
	8.10	Beitunia.	20 "	Cistern protection.	Inspect village cistern covers as a demonstration of protection in a mountainous area whose water supply is entirely from cisterns.	Medical Officer of Health, Ramallah.
	10.00	Hawara.	68 "	" "	" " " " "	
	10.15	Nablus.	75 "	Water supply and Irrigation.	Control of garden irrigation.	Principal Medical Officer Samaria & Galilee.
	10.50	Sileh.	84 "	Control of Spring.	Piped water supply of village from Spring.	" " "

Date.	Time.	Area, Town or village.	Distance.	Nature of Demonstration or Remarks.	Notes on Demonstration.	Demonstrator.
	11.45	Jenin.	130 kms	Garden irrigation control.	Demonstration of control of garden irrigation and mosquito breeding.	Principal Medical Officer Samaria & Galilee & Medical Officer of Health, Jenin.
	1 PM	Balfouria	145 "	Subsoil drainage.	Control of swamps by subsoil drainage and use of water thus obtained for village water supply.	Controller, Malaria Research Unit.
	2 PM.	Nazareth	150 "			
Sunday May 10.	7.30	Nazareth.		Depart for Tiberias.		
	8.15	Solim.	16 "	Impounding Project	Impounding of water from Springs.	Controller, Malaria Research Unit.
	8.30	Ain Taboun.	18 "	Drainage of springs.	Collection & disposal of spring water.	" " "
	9.15	Ain Harod.	21 "	Spring control.	Water supply and antimalarial control from a spring.	" " "
	10	Beit Alpha.	28 "	Antimalarial drainage.	Lateral drainage along mountain side. Clearance of swamp by cutting new channel for Jalud River.	" " "
	11	Ain Sakhne.	30 "	" "	Demonstration of Beisan drainage work. The drainage of large swamps for antimalarial and irrigation purposes.	Principal Medical Officer Samaria & Galilee & Medical Officer of Health, Beisan
	11.30	Tel es Shok.	32 "	Marshes.	Remaining marshes in Beisan area. Two large drainage ditches, dam and pool.	" " " "

Date.	Time.	Area, Town or village.	Distance.	Nature of Demonstration or Remarks.	Notes on Demonstration.	Demonstrator.
	11.45	Beisan.	40 kms.	Drainage.	Further demonstration of Beisan Drainage Scheme.	Principal Medical Officer Samaria & Galilee, & Medical Officer of Health, Beisan.
	12.45	Beisan.		Depart for Jisr Saghir.		
	2.15	Jisr Saghir	60 "	Depart for Tiberias.		
	3 PM.	Outlet of Sea of Galilee.	70 "	Control along river bed.	Degania control work.	Controller, Malaria Research Unit.
	3.30	Tiberias.	78 "			
	4.30	Migdal.	86 "	Plain of Migdal. Foreshore of sea.	General conditions along typical streams. Specific problem along foreshore of sea, breeding in run-off from springs.	Principal Medical Officer Samaria & Galilee, & Controller, Malaria Research Unit.
Monday May 11.	7.30	Tiberias.		Depart for Hule.		
	8 AM.	Tabga.	14 "	Control of spring.	Filling of small marsh near lake, in progress.	Principal Medical Officer, Samaria & Galilee.
	9 "	Safad Road.	30 "	View of Hule Basin.		
	9.45	Yessod Hamala.	42 "	Irrigation & drainage scheme.	Large irrigation and drainage scheme.	Controller, Malaria Research Unit.
	10.15	Malaha.	44 "	Spring control.	Problem of dealing with springs along Lake Shore.	" " "
	10.45	Khalsa.		Village problem.	Drainage work in progress.	Principal Medical Officer, Samaria & Galilee.
	11.45	Bweizieh.Jahuleh Almaniyeh.	49 "	Village malaria.	Malaria in semi permanent residents.	" " "

Date.	Time.	Area, Town or village.	Distance.	Nature of Demonstration or Remarks.	Notes on Demonstration.	Demonstrator.
	1.45	Tiberias.	97 kms.			
	2.45	Tiberias		Depart for Nazareth.		
	3.45	Nazareth.	129 "			
Tuesday May 12.	7.30	Nazareth.		Depart for Nahalal.		
	8 AM.	Nahalal.	11 "	Drainage.	Demonstration of plans of completed colony drainage.	Field Engineer, Malaria Research Unit
	9 "	Kishon Bridge on road.	21 "	Pools in river bed.	Problem of dealing with pools in Kishon river.	Controller, Malaria Research Unit.
	9.45	Haifa.	34 "			
	10.15	"		Routine procedure in Haifa.	Short account of routine antimalarial procedure in Haifa town with demonstration of route sheets maps, case records, etc.	Principal Medical Officer, Haifa, and Mr. Gibbs.
	11.15	"		Seacoast area (Area "C").	Control of agricultural wells by fish and oil.	Principal Medical Officer, Haifa & Controller Malaria Survey Section.
	2 PM	"		Malaria Research Unit Laboratories.	Demonstration by Controller & Field Medical Officer, Malaria Research Unit.	Controller & Field Medical Officer, Malaria Research Unit.
	3.30	Mt. Carmel.		View of Kishon area.	Explanation of Kishon problem with demonstration by maps, of work proposed.	Principal Medical Officer, Haifa & Controller Malaria Survey Section.
Wednesday May 13	8 AM	Leave Haifa for Acre.		Mouth of Rivers Kishon & Namein & part of Namain swamps.	Sand blocked river mouth banking up river and producing swamps.	Principal Medical Officer, Haifa.
	9 "	Arrive Acre.	20 kms			

Date.	Time.	Area, Town or village.	Distance.	Nature of Demonstration or remarks.	Notes on Demonstration.	Demonstrator.
	9.15	Acre.		View from Prison Roof. Swamp area near Acre.	Ponds treated with Paris green	
	9.30	Leave Acre for Musherifa	38 Kms.	Impounding of springs to prevent a marsh at Musherifa with subsequent neglect.	General remarks on malaria control works, and the importance of maintenance.	Principal Medical Officer, Haifa.
	11.	Leave for Kefr Yasif via Kabri.		Springs at Kabri. Irrigation of gardens and proposed improvements of water supply to Acre.	Relation of controlled water supplies to malaria prevention.	Principal Medical Officer Haifa & Medical Officer of Health, Acre.
	12.30	Kefr Yasif.	55 "			
	4.15	Arrive Haifa	75 "			
Thursday May 14.	7.30	Haifa.		Depart for Athlit.		
	8.15	Athlit.	22 "	Drainage of marsh at Salt Works.	Demonstration of plans of drainage and completed work.	Controller Malaria Research Unit.
	9.30	Tantura.	29 "	Swamp drainage.	Proposed plan of drainage.	Controller Malaria Survey Section.
	10.30	Kabbara.	35 "	Large reclamation & drainage scheme.	Demonstration of plans of Kabbara drainage & irrigation scheme. Steam plough at work. Photographs of parts before & after drainage.	Principal Medical Officer, Haifa.
	1 PM				Demonstration of Shuni Spring.	" " "

Date.	Time.	Area, Town or village.	Distance.	Nature of Demonstration or remarks.	Notes on Demonstration.	Demonstrator.
	2.30		87 kms	Tulkarem Town.		
	3.15		114 "	Nablus.		
	5.30		180 "	Jerusalem.		
Friday May 16				Jerusalem.		
Saturday May 16	7.30	Jerusalem.		Depart for Latroun.		
	8.15	Latroun.	27 "	Winter flowing wadis.	Mosquito control in winter flowing wadis.	Principal Medical Officer, Jerusalem.
	9	Wadi Surar.	39 "	" " "	Problem of mosquito breeding (in winter streams) Summer pools in wadi bed.	Medical Officer of Health, Ramleh.
	10	Tel Turmas.	54 "	Spleenomegaly.	Demonstration of enlarged spleens in children.	Medical Officer of Health, Majdal.
	12	Sarafand.	73 "	Air Force & Army Malarial Records.	Demonstration of records pertaining to malaria in Royal Air Force and Army in Palestine, & anti-malarial work in the camp.	Principal Medical Officer, Palestine Command.
	2.30	Nebi Rubin.	88 "	Drainage scheme.	Demonstration of plans for drainage of large swamp.	Controller, Malaria Survey Section and Sanitary Engineer, Dept. of Health.
	3.30	Jaffa.				
Sunday May 17.	9.30	Jaffa		Organization of Jaffa antimalarial work.	Local antimalarial situation with demonstration of routine procedure	Principal Medical Officer, Jaffa.

Date.	Time.	Area, Town or village	Distance.	Nature of Demonstration or remarks.	Notes on Demonstration.	Demonstrator.
	10.45	Jaffa.		Marsh.	Demonstration of marsh in Municipal area, Jaffa.	Principal Medical Officer, Jaffa.
	11.15	Jaffa.		Irrigation problem.	Control of irrigation in orange gardens.	" " "
Monday May 18	7.30	Jaffa.		Depart for Musrara.		
	7.45	Musrara Bridge.	5 kms	Control of perennial wadi.	Demonstration of plan for controlling mosquito breeding in a perennial wadi.	Controller & Field Engineer, Malaria Research Unit.
	8.15	Jerisha Mills.	6 "	Spleenomegaly.	Enlarged spleens in children who reside near mills. Problem of back-flow marshes from dams.	Principal Medical Officer Jaffa & Senior Medical Officer of Health, Jaffa.
	9	Jemain Marsh.	9 "	Large marsh.	Demonstrating of a large marsh in which previous canalization by Army has not been kept up. Problem of malaria in semi-nomadic tribes.	" " "
	9.45	Seven mills.	16 "	Dam.	Backflooding marshes from mill dams.	" " "
	10.10	Wadi Ishkar.	18 "	Drainage of wadi.	Scheme for drainage and demonstration.	Controller & Field Engineer, Malaria Research Unit.
	10.40	Wadi Addas.	21 "	Canalization of wadi.	Plan and demonstration of work in progress.	" " "

Date.	Time.	Area, Town or village	Distance.	Nature of Demonstration or remarks.	Notes on Demonstration.	Demonstrator.
	11.15	Bir Addas.	24 kms.	Splenomegaly.	Demonstration of enlarged spleens in village and specific village problems.	Principal Medical Officer Jaffa and Senior Medical Officer of Health, Jaffa.
	12.15	Wadi Abu Lejja.	38 "	Straightening of wadi bed to cut out marshes.	Plans and demonstration of completed work.	Controller and Field Engineer, Malaria Research Unit.
	12.30	Petah Tikvah	40 "	Use of fish as control measure.	Use of Tilapia in controlling breeding in orange gardens.	Field Medical Officer Malaria Research Unit.
	2.30	Petah Tikvah		Depart for Jerusalem, via Ramleh and Ludd.		
Tuesday May 19.	10 AM.			Meeting of Antimalarial Advisory Commission.		
Wednesday May 20.	8 AM			Depart for Syria by car.		

APPENDIX.

SUMMARY OF THE WORK CARRIED OUT BY THE MALARIA RESEARCH UNIT DURING 1925.

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Epidemiology.

Further study was made of the epidemiology of malaria and it was noted that in the coastal area there was only one epidemic period - June, July and August - and that the malaria was mainly benign tertian. In the inland plains, however, there are two epidemic seasons - summer and autumn. As the result of control measures the summer epidemics of benign tertian malaria have during the past few years become negligible and the main outbreak has been of malignant tertian malaria in the autumn.

The relation of these epidemics to certain species of Anopheles has been confirmed; A.elutus is more prevalent in the spring and summer and A.sergenti in the autumn, the latter being the more difficult to control.

From a study of temperature conditions, particularly of the water of breeding places and of houses and stables, it was concluded that during January and February the temperature of the water is too low for larval development to proceed and that of the air too low for the development of Sporozoites to take place. A.elutus with active sporozoites has been found in January but more in February. The temperature in August has a direct effect on the adult as well as on the immature stages of A.elutus, the maximum temperature for which appears to be 34° to 36°C. From March to mid July and during October and November the temperature is favourable to A.elutus.

The total rainfall during the winter of 1924-25 was very low and consequently spring flows were greatly diminished, but in the coastal region there were several very heavy downpours and the swamps in this area remained extensive. The malaria incidence therefore in the coastal area remained fairly high but fell in the inland areas.

Habits of the Anopheles.

Systematic dissection had shown definitely that A.elutus and A.sergenti transmit malaria in Palestine, active sporozoites having been found in the salivary glands of each species. During the year young cysts were found in A.superpictus also but not active sporozoites.

As regards breeding habits, stagnant waters breed A.elutus and moving waters breed sergenti and superpictus.

A.elutus has its periods of high prevalence in June and July, and October and November. A.superpictus is most prevalent in September and October but has a period of slight prevalence in July. The prevalence of A.sergenti has one peak in September and October.

The range of flight of Palestinian Anopheles has been shown on ample evidence to be 1½ to 2 kilometres and under certain conditions dispersion may extend to three or more kilometres; while during what may be termed the "hibernation flight" anopheles may invade areas six or seven kilometres from their breeding point and there is some evidence that outbreaks of malaria may follow such invasions. Observation also shows that the range of dispersion might be 3½ kilometres or more. By range of dispersion is meant the diffusion of anopheles from a highly infected village 2 to 2½ kilometres from the marsh to neighbouring villages much further away. An example of this was the new settlement of Nahlat Jacob 3½ kilometres from an uncontrolled part of the Kishon. Isolated female Anopheles with developed ovaries were found but no males or young females. About 1½ kilometres away was a village in which large numbers of males and fresh females were regularly found.

Adults of the three important house visiting species of Anopheles - elutus, superpictus and sergenti - were found hibernating during the winter months in various hiding places but it is not clear to what extent if at all the various species hibernate as larvae.

Control Measures.

The Unit continued its measures of malaria control in the Demonstration Areas round the Jewish Colonies of Ekron, Petach Tikva, Hedera, Zichron Jacob, Athlit and Yazur, and in parts of the Jordan Valley. The measures carried out were mainly antilarval and their effectiveness in controlling malaria was again evident. Even under fairly difficult conditions such as exist in the Kishon and Jordan areas, success was obtained. The results were checked by comparisons of the spleen and blood examinations of the controlled and neighbouring uncontrolled populations.

The important considerations were that the cost was not excessive viz: P.T.10 per head for routine antilarval measures, exclusive of the cost of permanent drainage works, and that other measures would not have been equally effective. The two measures of which the Malaria Commission expressed themselves in favour were (a) systematic treatment of carriers and (b) destruction of adult mosquitoes. Both these measures had been tried but were found difficult of general application and of value only under certain limited conditions. The treatment of carriers failed on account of the resistance of cases of chronic benign tertian malaria to treatment and of the difficulty of carrying out mass treatment, particularly in villages where a large part of the population lived many weeks each year out in the fields. Further the per capita cost of quinine treatment worked out at P.T.58 for the quinine alone, while the cost of staff was about P.T.30 per head.

With regard to the second method in the destruction of adult anopheles - only in a few places did a certain amount of success appear to result.

The Laboratory of the Unit in addition to the research work and the routine malaria examinations undertaken, carried out the laboratory investigation of infectious diseases - particularly the enterica and dysenteries - in the area. The amount of the routine diagnostic work increased by 28%, over the preceding year.

The Unit advised and assisted the Jewish National Fund, the Palestine Jewish Colonization Association and the American Zion Commonwealth in antimosquito drainage schemes. Of these schemes the drainage of the Kabbara swamps and the Kishon plain were the most extensive. The Unit itself carried out smaller schemes of a permanent nature in upper and lower Galilee, in Samaria and in the Jaffa area and assisted various colonies in numerous minor drainage works.

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